

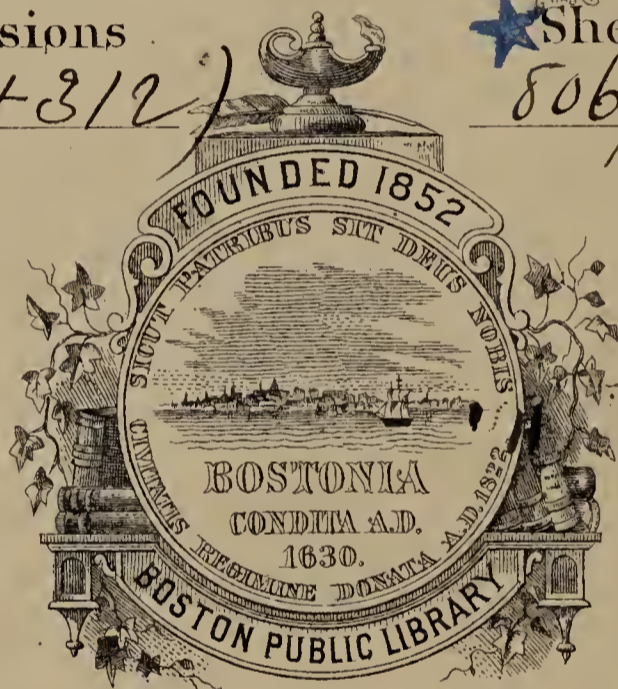
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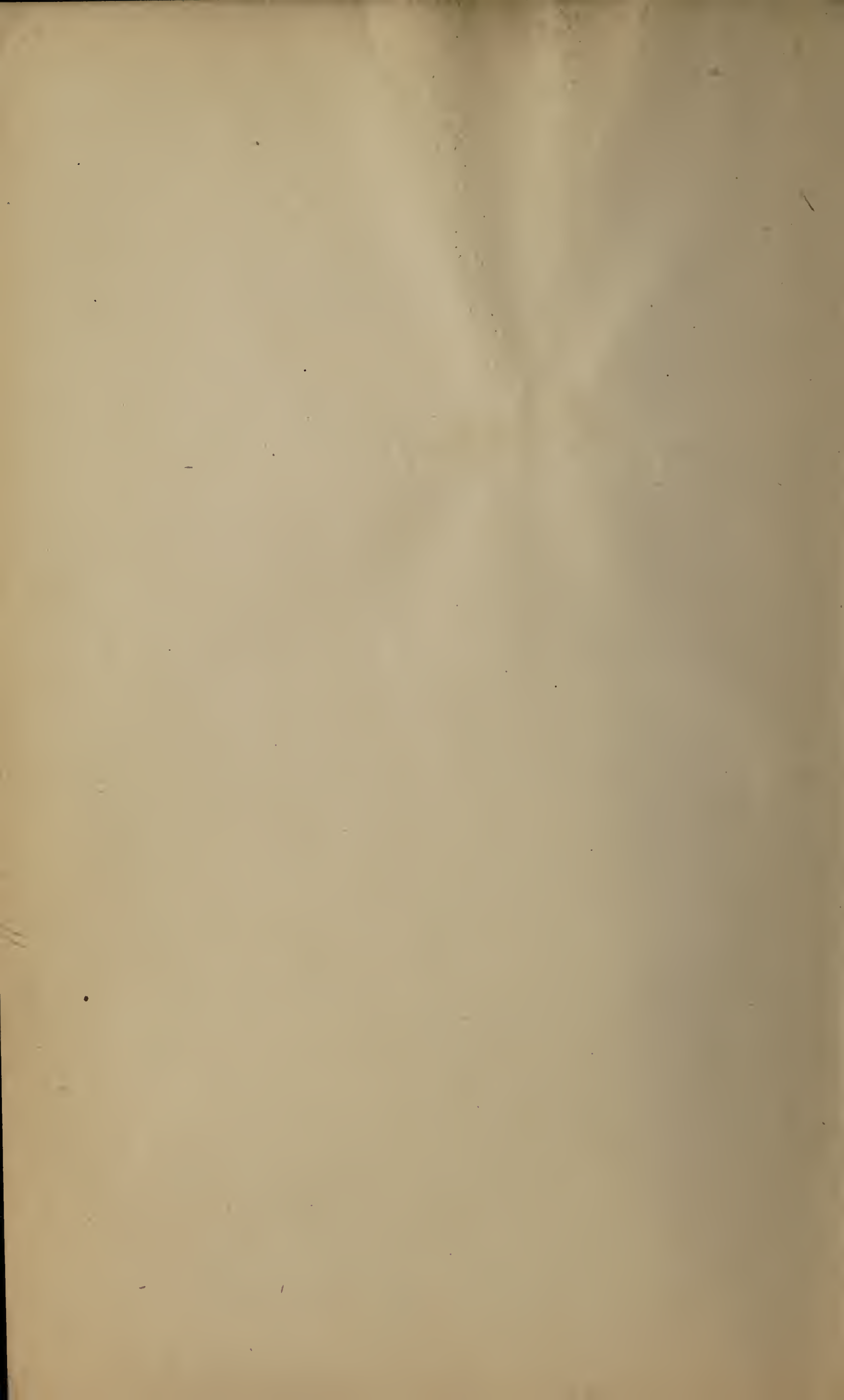


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PLAN AND GRADED PROGRAMME  
OF  
INSTRUCTION IN DRAWING

FOR THE  
**Public Schools of Massachusetts**

OF THE  
PRIMARY, GRAMMAR, AND HIGH SCHOOL GRADES.

BY  
WALTER SMITH,  
*ART MASTER, SOUTH KENSINGTON, ENGLAND;*

DIRECTOR OF DRAWING IN THE CITY OF BOSTON PUBLIC SCHOOLS,  
STATE DIRECTOR OF ART EDUCATION IN MASSACHUSETTS,  
AND PRINCIPAL OF THE MASSACHUSETTS  
NORMAL ART SCHOOL.

1880.

[For copies of this Plan, apply to Curator, Normal Art School, Boston:]

BOSTON:  
Rand, Aberg, & Co., Printers to the Commonwealth,  
117 FRANKLIN STREET.

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every European State where the soil has been ungrateful and education has flourished. And now that, by the opening up of the vast areas of food-producing lands in the West, the bulk of our food will be obtained from outside the State, the decline of agriculture as an occupation, and development of manufacturing industry as a substitute, will become more decided and more general.

It was recently said by a member of the Board of Education, that the soil of Massachusetts was only fit to grow mills and schoolhouses; and the State is certainly better known at present for the quality of its manufactures and education, than for any products of the soil.

The element of profit on investment of capital also influences the transformation observed.

By a recent return of the Bureau of Statistics, it may be seen that the numbers employed in the three branches of productive industries are very unequal: thus, —

In fisheries are employed . . . . .	6,656 persons.
In agriculture are employed . . . . .	70,945 “
In manufactures are employed . . . . .	316,459 “

And the results of employing capital in the two largest agencies are even more divergent: thus, —

In agriculture the capital employed is . . . . .	\$210,000,000
Annual product . . . . .	\$11,000,000
In manufactures the capital employed is . . . . .	\$283,000,000
Annual product . . . . .	\$593,000,000

It will be seen, therefore, that climate and profit are both engaged in making of Massachusetts a manufacturing State.

This tendency having been felt and observed by the most far-seeing and public-spirited citizens, it not unnaturally occurred to them to consider what were the chief elements of value in manufactured goods; and the verdict of the whole world on this inquiry was, that skill in manufacture, and taste in design, were the most important factors in deciding the pecuniary value of manufactured goods.

The experience of other countries, which had passed, or were passing, through the same transformation, was consulted; and the remedies and provisions employed by them to fit their people to the new circumstances were carefully considered. It was found that the common antidote for natural or national



deficiencies in industrial manufactures was industrial education in art and science.

Though disjointed efforts had been made towards the instruction of private individuals in these subjects, no public provision had been attempted in Massachusetts, by which the whole community should receive instruction, up to the year 1870, and no State law required such instruction should be given.

In order to make a beginning towards the general elevation of public taste, it was resolved that the one subject which all the older European nations agreed should be taught in the public schools, — viz., drawing, — should be incorporated as an element of instruction in the required branches, to be taught in public schools of Massachusetts.

Accordingly the following Act was passed : —

[Chap. 248, Acts of 1870.]

SECTION 1. The first section of chapter thirty-eight of the General Statutes is hereby amended so as to include drawing among the branches of learning which are by said section required to be taught in the public schools.

SECT. 2. Any city or town may, and every city and town having more than ten thousand inhabitants shall, annually make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day or evening schools, under the direction of the school committee.

SECT. 3. This act shall take effect on its passage. [*Approved May 16, 1870.*]

It was the passage of this Act which necessitated the establishment of the Normal Art School, unless the Act itself were to become a dead letter, and wholly inoperative.

The Act required industrial drawing to be taught, but never inquired where the teachers were to come from; and whilst France and England had found it impossible to secure qualified teachers of industrial drawing until they had established normal art schools, and all their efforts had fallen short of success until teachers had been thus supplied, so this was found to be the want in Massachusetts.

In the same year that this Act was passed, the city of Boston was employing five special teachers of drawing in the day-schools; and its drawing committee said, in their Annual Report for 1870, "Of all the studies in our public schools, drawing

exhibited the most feeble results. We have had no system. Our teachers have not been instructed, and the work must now be commenced. Shall we have a plan? or shall all be done at random?" What the Boston committee said, every school committee in the State felt.

In the same year the School Board of Boston and the State Board of Education, acting in concert, invited me to undertake the work of organizing a scheme of industrial art instruction, and supervising its application in city and State; and, after a long consideration of the invitation, I accepted it, and entered on my work in the fall of 1871. During the fall and winter of 1871-72 I visited and examined the drawing-classes of all the cities in the State which had made an effort to carry out the law of 1870 by establishing free evening drawing-classes. After this round of inspection, I saw that to make any progress in this matter, and to economize the expenditure upon it, it was essential that the teachers should be taught, or the time of the pupils, and taxes of the citizens, would be equally wasted, and general disappointment ensue.

The Board of Education, therefore, acting upon my reports, appealed to the Legislature the following year for means to establish a normal art school; and in 1873 it was established, beginning on Nov. 11, in the upper rooms of a private house on Pemberton Square, with 107 students. It has therefore been in existence six years, is now located at 28 School Street, and at present writing 200 students have entered its classes since Oct. 1, 1879.

#### OBJECT OF THE SCHOOL.

Though this has been frequently and fully described, it will be necessary to repeat the explanation until it is understood by the public, which supports the school.

The primary object sought by the school is to educate and train teachers of industrial drawing, so that the law of 1870 may be complied with.

There is a prevalent notion that the school is carried on to train designers for manufactures only; but, though this will be indirectly the inevitable and final result of the education given in the school, it is not the first or only aim.

So limited a purpose as that was found to cause a failure in those schools of the Old World which pursued such an object only; and the surest way of producing designers was discov-

ered to be by educating the whole people in the elements of art by means of trained teachers, who should scatter this instruction broadcast over the land, and thus open the doors of success in art and skilled labor to every intelligent person. That this is the most economical way to secure the end proposed, and bring the opportunities and advantages of art education to the largest number of the population, has been demonstrated both by the actual history of the school, and by the experience of other countries. Every student passing through the school, or even through part of its course, will influence, when employed, many thousands of persons by the instruction he gives to the teachers of the public schools, and through them to the children. It might be instanced that the teachers of drawing in the five normal schools at Salem, Bridgewater, Worcester, Framingham, and Westfield, have all been students in the Normal Art School. By their education in it, every pupil in those normal schools has been affected; and every one of those who becomes a teacher will teach drawing as well as he teaches any other subject. The same holds good in such important centres of manufactures as Lowell, Worcester, Fall River, Lynn, Lawrence, and Springfield, and all the cities of Massachusetts where trained teachers from the Normal Art School are employed to instruct the teachers of the public schools, supervise their instruction in the schools, and conduct the free evening drawing-classes for mechanics.

In the same way it may be noted, that, of nine teachers now employed in the Normal Art School itself, seven have been trained in it; and, of twenty special instructors employed in the day and evening schools in Boston, fifteen have been educated in the school, the remaining five having been appointed before the school was established, and not being teachers by profession.

It would have been impossible in any other manner than through a normal art school to effect so wide and ever-increasing an influence upon public education, or to do it so economically to the State.

This, therefore, should be considered when the cost of the school to the State is being discussed. There can be little doubt that, directly or indirectly, every class-room in the public schools of Massachusetts has been affected by the work of the school, not so effectively or generally as will be the case more and more every year, but to an appreciable extent even now.

Many important semi-public schools, colleges, and institutions of Massachusetts — such as the Boston Fine-Art Museum School, the Institute of Technology, Wellesley College, and Holyoke Seminary — have now in their employment teachers of drawing trained in the Normal Art School; and these institutions would have found it difficult to obtain such competent teachers if the school had never existed.

This, then, has been the aim of the school; and from it there has been no deviation. It has not attempted to make accomplished specialists in the practice of any one branch of art, which is the proper aim of private schools and tuition, but to give such a thorough general knowledge of the whole field of industrial art education as can be most successfully used in public employment; and this guarantees to the State — the source from which the education is derived — a return for its outlay of public money. The school will incidentally produce both designers and artists; but its success must be measured by its product of good teachers.

This is what the school was established for: and if it has, under the circumstances of its short existence, done the work as well as could be expected, it has succeeded; and, if not, it has failed.

That is the only standard by which it can be fairly judged, and the evidence on this point is a matter of fact.

If the results already secured have enabled us to make a satisfactory beginning at the very foundation of industrial art education, it may be safely promised, that as progress is made in it, and teachers of the highest qualifications required, the school will be able, through the attainments of its older and graduated pupils, to minister to this need also.

Higher technical instruction will be required as schools of art and science are established, as they undoubtedly will be, — special schools, in which the direct application of art to industry is taught, and the studio and class-room are mere ante-rooms of the workshop.

The graduates of the school, — those who have spent four years under instruction, attained a high degree of manual skill, and a rounded knowledge of the subject of industrial art, and who have matured and tested these qualifications in the laboratory of actual experience in teaching, organizing, and testing classes, — they will be ready and able to become principals of

such special schools; and we may expect here as elsewhere that every city will eventually make a school of art and science the centre of its system of industrial art education.

Without the trained teachers for such institutions, it would be impossible to carry them on; and it ought to be recognized as the experience of the whole world, that private enterprise has never established normal art schools to provide them.

No private or individual interests are concerned in general education sufficient to induce people to make an outlay of their means or an investment of their capital in it as a private enterprise by educating teachers; so, unless this provision for a public necessity has been made by the State, it has never been made at all, which was our experience in Massachusetts until the Normal Art School was established.

Other results from the leavening influence of the school are arising on all sides.

Associations for the encouragement of art-study and the practice of branches of art-industry have been organized in many portions of the State, and are on the increase. The whole subject of industrial art is now engaging the attention of many persons who are interested in it from its economic as well as social aspect, but who could see little prospect of improvement until the general diffusion of sound principles of taste among the people, by means of drawing, opened the way to improvement.

It is true that the first steps only have been taken in this march forward; but in every journey the first steps are as necessary to progress as the last.

There are three agencies by which the art education of a whole people can be efficiently and economically secured,—first, by the teaching of drawing in the public schools; secondly, by providing through a normal art school the teachers who can bring this about; and, thirdly, by the establishment of a museum of fine and industrial art, open to the public on terms which are non-exclusive.

All of these three agencies are now in successful operation in Massachusetts; and all that is now required to reap from them all the advantages they are able to confer is, that the work begun shall be patiently continued until the results anticipated shall be accomplished.

## THE PUBLIC DEMAND FOR INDUSTRIAL ART EDUCATION.

It was at first thought that there was not a sufficient demand for instruction in drawing to make the provision of a normal school by public action necessary and justifiable; yet no one ever suggested the means by which the law of 1870 could be carried out in any other way. So, at its first establishment, accommodation for 35 students only was provided in the school; yet 107 students entered at the first examination for admission, and they had to be taught in three sections, and receive only a third of the time they should have had for instruction.

Since the opening of the school in 1873, no less a number than 1,543 pupils have been taught, averaging in the seven years of its existence an annual studentship of 220.

These students have stayed longer or shorter periods in the school, varying from less than one year to six years, according to their means of support during study, or their opportunities of employment, which have in many cases taken them from the school before completing even the first of the four groups of study into which the whole course of four years' work is divided. But already the school is beginning to feel the influence of the teaching of drawing in the public schools; and youths of both sexes are now in their third or fourth years of study at the school, who were well prepared to enter it through previous instruction in the public schools, and their progress and attainments are in every way remarkable.

Familiar with the European normal art schools, I know of none in which a more thorough education is given, or which has a body of students of greater promise. And this opinion has been supported by every competent educator who has examined the subject for the purpose of comparison.

The French imperial commission sent to the Philadelphia Exhibition of 1876, for the purpose of examining and reporting upon the subject of education as there displayed, after a most scrutinizing and exhaustive inquiry, reported officially that, —

“As soon as the Normal Art School shall have had time to bear fruit, we can predict to the industrial art of Massachusetts new increase and a brilliant future.”

This report was made on the evidence of work produced in it when only three years old; since which time it has been immeasurably improved.

In a valuable article upon the Art-Institutions of the United States, published in "Harper's Monthly" for March, 1879, the following testimony is borne to the influence and success of the Normal Art School:—

"The Massachusetts Normal Art School, while devoted chiefly to the advancement of industrial art, has also, by its example, greatly assisted the growth of art-feeling in the popular mind. . . . It may be conceded, then, that the founding of the Massachusetts Normal Art School was not only a strong indication of a growing demand, but that it has also been a very powerful agent in the diffusion of art-knowledge in the United States."

I introduce this independent and expert testimony—in the first case, that of the chosen representatives of the most artistic nation in the world, and, in the second, from a review which has identified itself with the art-progress of America—to show, that, however little the school and its work are sometimes understood and much misrepresented, yet in the minds of competent judges there is but one opinion, and that one of commendation, concerning it.

Its appreciation also by the public may be measured by the fact, that its course of study has been displayed at every important exhibition since its establishment, and never yet so exhibited without receiving the highest distinction that could be conferred upon it. Perhaps the most important testimony borne to the work and works of the school has been that of the International Jury on Education, at the Centennial Exhibition at Philadelphia, in 1876. In awarding a medal and diploma to the school, the judges give the following reasons:—

"For the extent, beauty, and value of the exhibit, and for the very important work the school has done and is doing in behalf of art education."

Such references and explanations as these would be absolutely unnecessary, and perhaps, also, in questionable taste, were it not for the very exceptional circumstances in which the school is placed. It is actually the only State Normal Art School in America; so there is nothing of a similar character here to compare it with, or judge it by, and exceedingly few persons who have had the opportunity to know any thing about it, or experience to qualify them to judge.

It is not to be wondered at, therefore, if people, in their absence of knowledge or misunderstanding of its origin and aims, should be sometimes misled, even with the best of motives, to underrate its importance or interfere with its usefulness.

Up to the present time, there have been 201 students who have taken one or more certificates; and, of these, 163 are either employed in teaching drawing or remain still in the school, increasing their qualifications to do so, as the following table shows:—

Total number of students holding certificates . . . . .	201
Of these there are employed in teaching drawing . . . . .	113
Continuing their studies in the school . . . . .	50
Employed as designers, draughtsmen, &c. . . . .	9
Not heard from . . . . .	29
	201

In addition to these known cases, a large proportion are employed in teaching drawing who do not make it their principal occupation, and who have not taken a certificate.

Thus Mr. Ridler, principal of the Kingston High School, has, through his connection with the Normal Art School as a student, originated a plan of instruction for his school, which he himself carries out, and succeeds admirably in it. This is a type of many cases in which the school accomplishes the object for which it was established.

There is, moreover, a demand arising for elementary instruction in art and science, not only in Massachusetts, but throughout the whole of the United States, such as would hardly have been considered possible ten years ago. The education of all classes is now considered deficient without such instruction; and it is those branches of a useful education which have most practically assisted to make other nations wealthy and powerful. The tide of prosperity which has happily now set in amongst us will increase the demand for education in art and science; for the great need of this country is skilled and productive labor, and that is an impossibility without the skill and taste which art and science by education alone can give.

#### SCHOOL PREMISES AND ACCOMMODATION.

The Board of Visitors have for so many years pleaded for a separate building in which to carry on the school, and I have



written and spoken so much about it, that there seems nothing new to say on the subject. The present accommodation; as regards its central locality, could not be improved upon; and the rooms are so great an improvement on those in Pemberton Square, where the school originated, that it hardly seems gracious to urge upon the State Board the necessity for a change.

There are, however, many circumstances in connection with the administration of a mixed school of adults — which need not be particularized, because every one of educational experience knows what they are — that make it undesirable for a school to be mixed up with a series of private offices on three of the floors of any building not originally intended for educational purposes, and principally now devoted to mercantile pursuits. The question of cost in the annual rental of these premises has also become an important one; for, by a decrease in the appropriation made by the State for the support of the school, the staff of instructors has already had to be reduced.

The great value of premises so near the City Hall, and amount of capital invested in the present building, may make it impossible that the rent can be very greatly decreased.

The lease of the rooms now used will expire, soon after the close of the present school-year, in June next. Although it is understood that a considerable reduction of rent can then be secured, the expediency of renewing the lease will depend somewhat upon the practicability of securing elsewhere better accommodations at the same or at a lower rate.

#### THE ANNUAL EXHIBITION OF INDUSTRIAL DRAWING FROM DIFFERENT CITIES AND TOWNS.

This exhibition was held in the month of May at Horticultural Hall, Boston, and was the eighth of its kind, the first having been held in 1872.

The origin of the exhibitions was a desire on the part of the committees and teachers to see what was being done in the matter of teaching industrial drawing in the several cities and towns where the law of 1870 was being carried out. There was another plea made for such annual exhibitions, which the Board of Education considered a strong one; viz., that, by a system of awards to the good work, the teachers, as well as the public, might learn from competent judges the character of work which should be pursued in the schools and classes.

For such good reasons the Board decided on holding the exhibitions, and appointed a board of judges to decide upon the merits of the productions, and award marks of approbation to excellent commendable specimens.

The exhibitions having accomplished the object for which they were instituted, visited by all the teachers of drawing in the State, the strong points in the display of each city have been noted, and every teacher has been strengthened by the suggestions offered.

There has also been a gradual elimination of wrong methods of instruction by a systematic discouragement of them in the withholding from such works of awards made by the judges. Perhaps in no other way could so much general information be disseminated, have more weight, or be accomplished more economically than in such exhibitions as these.

The report of the board of judges, appointed by the State Board of Education for the year 1879, contains so much of interest on the subject, that I take the liberty of introducing it here, for the purpose of bringing it to the public notice: —

#### THE REPORT OF THE JUDGES TO THE STATE BOARD OF EDUCATION.

We have performed the task you imposed upon us, and examined the display of industrial drawing now on exhibition at Horticultural Hall from the public day-schools and free industrial drawing classes of the State. We have also, in accordance with your request, awarded marks of distinction and approval to such individual works or collective exhibitions of cities as seemed in our judgment to be deserving of them, and now submit to you the general report you ask for, as well as the list of individual awards. It is gratifying to be able to report a very decided advance in the character of work from the public day-schools. The marked feature in this part of the display is the systematic arrangement of the subject of industrial drawing, to adapt it by careful grading to the capacities of pupils at all the school-ages; having a clearly defined purpose from the first exercise to the last, which is to lay the foundation broad and sure for industrial skill in the future. To those of our Board who have been judges of these exhibitions, from the first one in 1872 to the present one, — and we have all been careful observers of each exhibition, — there is no feature of the exhibition of 1879 so pronounced as this systematic educational treatment of drawing in the public schools, to make it useful as a preparation for the practical duties of life, as well as to employ it as an implement of education whereby knowledge of other studies may be acquired, — rather than to consider it as an ornamental study only, of little practical importance. It is a triumph for drawing as a general elementary branch of education, that all mere

picture-making has been abolished, and a thing of work having industrial aims and means substituted for the thing of play that drawing used to be. This is the most encouraging element of the present exhibition; and we have some grounds for attributing the result to the holding of these annual displays, wherein the soundest and best work has been recognized and encouraged, and less practical work distinctly discouraged. An original feature in this year's exhibition is the placing of all grades of drawing in the public schools on exhibition in one room, — viz., the large hall of the building in which it is held. In this room are grouped together on a very simple plan drawings and designs from every grade of school in the city of Boston, — primary, grammar, high, evening, and normal art schools. Thus the exercises from the youngest children who draw on paper, to those of the teacher graduating from the Normal School, are clearly displayed, and are arranged in sequence easily to be understood, corresponding exactly to the instruction pursued in all the grades. This is a fair representation of the subject, and as such we commend it to your attention as an answer to the question, "What is industrial drawing?" so often asked by those who are not familiar with the matter.

*City of Boston.* — The exercises of pupils of the day-schools, — primary, grammar, and high, — though not submitted to us for award, should be noticed by us, if only to express our opinion that a greater average excellence of work is manifestly observable since the last exhibition in 1876. Every sheet of drawings on any one screen in the primary and grammar divisions represents a different school; and we notice a general uniformity of careful work in all, testifying to the unwearying efforts of the regular teachers in the schools, under whose instruction the subject is studied by the children. This is more satisfactory than the exceptional excellence of a few schools, which used to be observable several years ago. In the high schools, also, there can be no doubt of a progress having been made, both in the system of study pursued and in the attainments of the pupils in individual studies. In the evening-schools, with one or two exceptions, a more systematic course of study is evident in the industrial subjects of machine-drawing and ship-draughting; and many of the freehand works from the cast in several schools display great excellence.

*City of New Bedford.* — The prominence given to the study of color and industrial design in the exhibit of New Bedford is a repetition, on an even more successful scale, of that which we had to notice with the highest words of commendation last year. It is a display of which any city might well be proud. The study of natural foliage in the schools, both for itself as a means of education and for the purpose of obtaining materials for industrial design, is very prominent and praiseworthy, a recognition of the true source and purpose of the study of drawing in public schools. We awarded the mark of "excellent" to the display with the feeling that it did not express either the worth of the collection or our appreciation of the recognition deserved, determining to add, as we do now, that to the liberal treatment of this subject by the school authorities, to the intelligent organization and development of it by the teacher of drawing, and to the skill and success of the scholars, the State is indebted for an example worthy of imitation and emulation by other cities.

*City of Newton.* — To the city of Newton also we awarded the mark of “excellent” for its public-school display, equally admirable in all the grades of schools; the applied design in the high school being especially noticeable.

*Cities of Fitchburg and Lawrence.* — These exhibitions of public-school works give evidence of careful grading and honest effort in the right direction, adapting the subject to pupils of different ages, and not attempting too much. The Board awarded the mark of “honorable mention” to these exhibits, and are gratified to see two important cities pursuing the subject so systematically and successfully.

*City of Cambridge.* — The city of Cambridge sends an unusually large number of works, covering a broad field of industrial art study. Many awards have been made to individual works; and we regret that the day-schools, which have in previous years been so ably represented, have not appeared in this year’s exhibition.

*South Boston.* — As in the past, so in the present year, the South-Boston school has sent much work of the best kind. Its influence upon the young men of the locality must be of the highest character; for many drawings and one working-model display such thought and skill as could only be the result of a wise use of their leisure. As an auxiliary to the city free evening-classes, the school has done a good work for both the city and its own locality.

*Brockton.* — A printed course of studies, forming a key to this exhibition, made it especially interesting, besides illustrating the valuable method of having a plan to work on. This is the first time this growing town, which is entitled to be called a city, has made a display; and we desire to congratulate it upon the thoroughly practical way in which the study has been undertaken.

*Dedham.* — The public-school works were awarded an honorable mention, and were entitled to it by the creditable arrangement of the subject as displayed in the exercises of the pupils.

*Kingston* — A set of drawings from the Kingston High School, produced under the personal instruction of the principal, seemed to us deserving of the recognition of honorable mention on two accounts, — first, because they illustrated a good plan of instruction; and, secondly, because they were produced without the aid of a special instructor. Last year the school received a similar award, and this year’s drawings exhibit a decided improvement.

The schools of Medford, and classes in Braintree and Westborough, were “commended” by us; and we awarded the same distinction to the industrial drawing from the Reform School at Deer Island, where, we trust, the study of drawing will not be abandoned. It is especially gratifying to see the designs of the boys at Westborough actually manufactured, and the articles made from the designs exhibited side by side with the drawings. So, also, the mechanical drawing from Deer Island will materially help toward the effort to teach trades and useful occupations to the boys during their term of detention there.

*City of Fall River.* — It is a subject of regret that a great manufacturing city like Fall River should be absent from this exhibition; and a placard, which explains the reasons, of its absence, sent by the teacher of drawing

makes it all the more to be regretted. Last year a very successful set of works was sent, and we see by this placard that a similar set might have been forwarded this year but for some good reason. To the manufacturing cities of Massachusetts, of which Fall River is an example, this instruction in industrial art is of vital importance. It will supply the one proved deficiency of our industries; and, with the skill which this element of taste can give them, we can alone face the competition of the world, which is becoming fiercer and more general day by day.

The absence of many other prominent cities, like Lowell and Worcester, is also to be regretted; though we are informed that local exhibitions in those cities have taken the place of the general one held by the State. It is some satisfaction to us to have witnessed a gradual compliance with the law of 1870, which requires industrial drawing to be taught in every city of Massachusetts; so that now no city has neglected to provide this means of improvement for its citizens, though Chelsea and Somerville, we understand, do not now comply with the law of 1870.

*The State Normal Art School.* — The full representation of the whole course of study, extending over a period of four years, is now made more completely than in any previous years. In the work of the school may be seen the chief source of the improvement now being developed in the whole field of industrial art education in the State; for there is not a city or town of any importance in it that has not been influenced by the instruction proceeding from the school. The practical and industrial character of the education given in all of the classes is plainly manifested by the works exhibited, and a reflex of these characteristics will be found to permeate the general education of the State from its influence and example.

On the whole, we are well satisfied with the progress displayed by the exhibition, and the character which the subject has gradually assumed through the influence of such exhibitions in the past

(Signed)

C. C. PERKINS.  
HENRY HITCHINGS.  
OTTO FUCHS.  
WALTER SMITH.

#### THE SPREAD OF DRAWING IN THE STATE.

Though this could not be suddenly accomplished by the issue of any fiat or passing of any law, irrespective of ancient prejudices or the qualification of teachers to teach the subject, still it is gradually making its way into every school.

As before noted, every normal scholar for many years past has become qualified to a considerable extent to teach the elements of drawing to children; and all by their practice in teaching will be certain to improve. The instruction given in drawing in the normal schools has been, as a rule, excellent, and, in most of the schools, covering a sufficient area of subjects; but it should be remembered that the branches upon which the

examinations have been founded — viz., freehand drawing and design, object drawing, memory drawing, and the instrumental drawing of plane-geometrical problems and perspective — are all helpful to each other; and, without a fair proficiency in them all, none can be quite successfully practised. It must be a matter of growth before all this is understood and accomplished, and may not be hurried. When the children now taught to draw in the schools shall become the teachers, they will be so familiarized with the subject in all its elementary branches as to see their intimate relationship and helpfulness the one to the other.

It has been a subject of great regret to me, that a serious sickness at the time the teachers' institutes were held prevented my attending them in person this year.

For though the responsibility of managing, and all the direction and examination of, the Normal Art School, and much of the teaching also, falls upon me, and absorbs very much of my time, I yet feel that at the institutes many localities and persons may be reached directly that it is difficult otherwise to affect.

It has been some consolation to me that a graduate of the Art School, who has been working for five years under my immediate direction and personal instruction, should have been able to do the work at the institutes satisfactorily in my temporary absence from them.

#### PROGRAMME OF DRAWING FOR THE PUBLIC SCHOOLS.

By request of the Board of Education I have drawn up a synopsis of a course of study for the public day-schools, such as might give teachers and members of school committees some guidance and information concerning the object and character of the study.

This has been partly done before, but not so fully, or in such detail, as it is now presented.

This course of study has been arranged and formulated for the assistance of those whose duty, position, or inclination should lead them to teach drawing.

It is not constructed as a theory to be launched into practice as an experiment for trial by new hands. No subject is suggested, nor method described, that has not been practised by the writer as a teacher, before it became his duty to submit this plan for the guidance of others.

It is practical because it has been carried out, and teachers are not now asked to do any thing which the author of this scheme has not seen done before, or has not already done in his own experience. Much of it is already in successful operation in this State of Massachusetts, and time and faith alone are required to secure its fulfilment in all of its stages everywhere.

The information conveyed in the scheme will, it is hoped, set some people thinking about the practical character of the study, and justify its place in the public-school educational system. The qualification of the regular teachers to teach the subject is regarded as essential throughout; and the ground to be covered by them in their studies is indicated by the courses in the three grades of study and examination for certificate awarded by the Normal Art School. The programme of these courses is given at the end of the scheme in an extract from the circular of the school.

As this scheme is the most important contribution towards the advancement of art education in the State that I have been able to make during this present year of 1879, I take the liberty to hope that it may form part of this report for public distribution.

Yours faithfully,

WALTER SMITH,

*State Director of Art Education, Mass.*

## SYNOPSIS OF A GRADED PROGRAMME OF DRAWING FOR PUBLIC SCHOOLS.

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### PRELIMINARY STATEMENT.

EXERCISES in drawing, like those in other subjects of elementary education, must be adapted to the average capacity of pupils when the instruction is given in classes. They must be progressive and connected, from the lowest class to the highest; but, in the higher classes, when, as in drawing from objects, the instruction becomes individualized, the exercises may be varied to suit the varying capacities and powers of individuals.

Whilst the common principles of representing form by lines, shade, or color, are thus to be taught to all, unlimited scope for originality in the application of forms is to be given by elementary designing; the practice of re-arranging old forms in new combinations, or originating new ornamental treatments of natural forms, being the outlet for special capacity.

To give instruction in drawing intelligently, and promote general success, teachers should take pains to understand the aim and object sought to be accomplished by the study, and have in their minds a clear idea of how this is to be attained, so that they may all, in the several grades of their schools, be able to do their shares of the work.

This necessitates the adoption of a plan or programme of drawing, in which the final result aimed at is definitely followed from the first, every grade of school and each class in the grade having its work allotted to it, advancing from the lower and preparing for the higher grades or classes adjacent to it on either side.

In such an arrangement, scheme, or plan of study, the ages and mental capacities of scholars have to be considered; and, as these vary in individuals of the same grade or class, an average type must be taken and provided for in the several grades. In a well-considered and progressive plan, the work in the several



grades, though of equal importance to the final result, will differ in subject and character, according to its place in the plan, from that which goes before or follows after it, just as the base, shaft, and capital of the column are unlike each other, though together they form one object. The foundation, superstructure, and ornament of a building may be in different materials, but, associated, become one fabric; so the drawing in the primary, grammar, and high schools will vary if it is to be in harmony, and each note, whether high or low in the scale, will be part of a perfect chord.

From this point of view, it becomes of great importance that the essentials of knowledge and practice should be given in each department, so that none may be omitted or repeated uselessly, none be wrongly placed, and each part be subordinated to the whole. For this reason it has been thought advisable to submit a course of study to the committees and teachers of Massachusetts, which having been in operation, and proved to be practicable, may, in its main features, be adopted in all the schools of the State. Some preliminary remarks may here be appropriately made.

The drawing required to be taught in the public schools is *industrial* drawing, not pictorial drawing. It has been so defined in the statute, because the accuracy of workmanship and good taste in design, which sound instruction in drawing imparts to the creators of industrial products, are of general interest and pecuniary value in manufactures, whilst the mental habit which scientific accuracy and love of the beautiful will develop in the minds of all will be a social advantage. Experience has proved that the surest way of elevating public taste and improving all manufacturing industries is to educate all the people in the elements of art and science in primary schools (primary, grammar, and high), and to supplement this by instruction in technical subjects given to adults in secondary schools (schools of art or science, or the evening drawing-classes.) This will give general information to the public, who are consumers, and the germs of a developed taste to all, and special instruction to the few originators or producers whose occupations require great manual skill or higher and further knowledge of particular branches of art industry. It will also open the door wide to all those who have especial tendencies in a creative direction, and insure that no budding genius be overlooked or misdirected.

The only way in which all children can be taught to draw, as an element in all education, is by the qualification of all teachers, according to their several grades, to give the instruction. Special teachers are out of their places when employed to teach an elementary subject in the primary grades of school; and any such instruction given by them will be costly, inefficient, and will gradually disappear, because the pupils will not be sufficiently interested to learn well any thing which their appointed guides, the regular teachers, are not sufficiently interested in to learn at all.

It follows, then, that the first step towards the introduction of drawing into public schools upon sound principles, educationally and economically, is by the appointment, in the future, of those teachers only who are qualified to teach drawing, and by the instruction of present teachers who are not now qualified to teach the subject. The first part of this condition (the qualification of teachers who are appointed in the future) is made certain by the instruction given in the State Normal Schools to future teachers; the second part (the giving of instruction to unqualified teachers now in service) is made practicable through the teachers trained in the State Normal Art School. There are at present qualified teachers of drawing who have been trained in and certificated by the Art School, ready to be employed by school committees in giving courses of normal lessons to teachers of public schools, whose qualifications and addresses may be ascertained on application to the school. The cost of their employment would not be great, and would only be incurred for a time; and the State Board of Education having thus made provision whereby every school committee in the State may comply with the law of 1870, and have industrial drawing, in its elementary stages, taught in the schools under their charge, it is to be hoped and expected that instruction in the subject will hereafter become general, and as much a matter of course as instruction in the other elementary subjects with which it is grouped,—reading, writing, and arithmetic.

To facilitate this much desired result, the following epitome of a general plan has been prepared. It is addressed to teachers, not to pupils; and therefore technical terms have been used without explanation, which will require thorough illustration to pupils. Those teachers who have attended courses

of lessons in drawing will have no difficulty in understanding and explaining them, and those who are self-taught will be too well acquainted with text-books to need such information here. It is presupposed that those who have to teach an element of education will be practically and theoretically acquainted with it; and these suggestions, therefore, are made with a view of showing what to teach, rather than the method of teaching it. All teachers who are competent to teach writing and arithmetic can readily qualify themselves to teach drawing, which, in its elementary stages, is but a combination of the two applied to form, and appealing to the mind through the eye; nor does it require exceptional taste or great manual skill to teach elementary drawing to children. In so far as the subject applies to regular forms, upon which a knowledge of irregular forms must be based, whether plane or solid, and even to the extent of the appearance of objects, and effects of light and shade upon them, all is dependent on the understanding and reasoning powers, and not upon taste or manual skill. The truths of the multiplication-table are not dependent on the beauty of the written numerals, and form is as much a matter of proportion as arithmetic. The sense or dignity of a sentence does not come from the skill shown in the handwriting, but in the thing said, and the graceful and grammatical mode of expression: so, in drawing, the value of a work arises from its truth as much as from its style; and its chief value in education is, that it may have made its producer capable of seeing what was invisible to him before he made it, think new thoughts, and cast away old ignorance. This applies to the elementary branches of drawing, and may or may not be applicable to its more exalted phases; but it is because teachers have to do with these elements that the distinction should be made, and the difference, if any, be explained. In general education we have to teach what can be learnt by all, and is useful directly or indirectly to all, leaving to advanced and special education that which may be required by the few, or possible of attainment only to gifted or fortunate persons with peculiar privileges, whose needs are not of public concern.

The following propositions define the position taken on this question of industrial drawing in the public schools:—

1. All children who can be taught to read, write, and cipher, can be taught to draw.

2. Drawing, by the law of Massachusetts, is required to be taught to every child as an element of general education, like reading, writing, and arithmetic.

3. As an elementary subject, it should be taught by the regular teachers, and not by special instructors.

4. The true function of drawing in general education is to develop accuracy of perception and to exercise the imagination, thereby tending to produce a love of order and to nourish originality.

5. Educationally, drawing should be regarded as a means for the study of other subjects, such as geography, history, mechanics, design. In general education it is to be considered as an implement, not as an ornament.

6. The practice of drawing is necessary to the possession of taste and skill in industry, and is therefore the common element of education for creating an enjoyment of the beautiful, and for a profitable, practical life.

7. In the primary, grammar, and high schools, drawing is elementary and general; in the normal and evening schools, advanced and special, — for teaching purposes in the first, and for skilled industry in the second.

8. Good industrial art includes the scientific as well as the artistic element; science securing the necessity of true and permanent workmanship, art contributing the quality of attractiveness and beauty. The study of practical art by drawing should therefore comprehend the exactness of science by the use of instruments, as in geometrical drawing and designing, and the acquisition of knowledge of the beautiful, and manual skill in expression, by freehand drawing of historical masterpieces of art and choice natural forms.

9. Drawing may now, therefore, take its legal place in the public schools as an element of, and not as a specialty in, education, at as little cost as any other equally useful branch of instruction, with the prospect that at a future time as many persons will be able to draw well as can read and write well, and as large a proportion be able to design well as to produce a good English composition.

The terms and periods of study are so various in different localities, — some committees dividing the school year equally into two terms, and others into more, or not dividing it at all, — that I have not considered it advisable to make any division

of the year. The group of studies allotted to each year can be adapted by the authorities to suit the general regulations, and fit into arrangements upon which the other subjects are studied.

It has been assumed that public schools will be divided somewhat as follows:—

Primary and Intermediate,	}	<i>Primary and General.</i>
Grammar, and		
High Schools,		
Normal,	}	<i>Secondary and Special.</i>
Drawing, Free Evening, &c.,		
Industrial, and		
Normal Art Schools,		

The scheme now submitted refers only to the first group of schools; but it is my intention, as soon as possible, to publish a complete curriculum of study for the second group of four grades of schools, based on experience derived from the conduct of such institutions. Meanwhile, it is not considered necessary to delay the issue of this first instalment of a complete plan, because it will be in no degree affected by the second.

It will be seen that the school-life in primary and general schools is divided into twelve years of practice,—three for primary, six for grammar, and three for high schools. And the same scheme may be adapted to any system or nomenclature of grading, if it be made to represent the years of study in the order and sequence for each year as arranged.

## PRIMARY AND INTERMEDIATE SCHOOLS.

### FIRST YEAR.

Two hours per week. Four lessons, half an hour each. Pupils draw on slates and blackboard; teachers, on blackboard.

*Subjects of Lessons.*—1. Drawing from blackboard straight lines and their combinations. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing. One lesson in each division every week.

1. **FREEHAND.**—Pupils to be taught the names of lines; as straight or curved. The names distinguishing straight lines in different positions; as vertical or upright, horizontal or level, oblique or slanting. The relation of lines to each other; as parallel lines, or at angles with each other: the names of such angles; as right, acute, obtuse,—the teacher using the common

names to describe these. The combination of lines and angles to make figures; as triangles, square, rhombus, and rhomboid. The names of the different triangles. The division of lines into equal parts; their sub-division. The division of figures by lines, and names of dividing lines; as diagonal and diameter. Drawing from blackboard, by direction and instruction of teacher, forms of objects or simple patterns of ornament, all composed of straight lines. Length of lines and size of figures to be tested by rule and measure after being drawn.

2. DICTATION. — Drawing the same or similar exercises from oral description, without blackboard illustrations, beginning with single lines in defined positions, then two or more combined. Simple figures and their divisions, to teach names in connection with forms. Variations of previous exercises to impress the value of names; such as diagonal and diameter. Ruling lines of given length through given points. Measuring the length of indefinite lines already ruled.

3. MEMORY. — Drawing from memory examples already worked, forms or objects which are described by name; such as the Greek or Latin cross. Patterns remembered from copies on the blackboard. Teach practical accuracy of work by requiring pupils to measure the length of lines by the inch-measure after a fair effort has been made by freehand, and test the straightness of lines by the ruler, and the size of regular figures in the same manner and by the same means. Encourage observation, create ideas, and teach how to name lines and forms by questioning pupils about right and wrong interpretations of terms, always illustrated by diagrams made by teachers, and sketches on slates by pupils. Occasionally draw an outline of some well-known simple object on the board, and call for criticism and analysis of its shape by the class. Then cover it up, and require the pupils to draw it from memory. Uncover it, and compare the copies with the original.

4. DESIGN, OR INVENTIVE DRAWING. — Drawing of regular forms — as the square, triangle, oblong — with ruler, and of a required size by measure. Dividing them into equal parts. Filling each part with similar shapes, made by straight lines, or any form the pupil may choose. Explain symmetry and repetition. Inventive drawing to be a recreation or amusement, and pursued as in kindergarten schools. Children unable to do it, to be allowed to rest, and watch those who can, and never to

be distressed by their work. The first exercises to be in drawing the second side of a symmetrical form or object, one half being given on one side of a central vertical line; to teach balance and symmetry. To repeat a given unit in the remaining division of a form, the first being given, to teach repetition. Thus, a star given in one-third of an equilateral triangle, to repeat it in the other two-thirds; or a cross given in the fourth of a square, to repeat it in the remaining three-fourths. These units must be given first, before the pupils can invent their own. In each lesson try to make a distinct impression about some one point, — either what symmetry is, or the name of some combination of lines, or how the pencil should be held, or how the head should be placed when the drawing is being made; and never try to teach more than one thing in any one lesson. Be content in criticising to correct, or call attention to, one deficiency at a time, or at a lesson, leaving the others for future remark.

#### SECOND YEAR. (PRIMARY SCHOOLS.)

Two hours per week. Four lessons of half an hour each. Pupils draw on slates and blackboard; teachers, on blackboard. Card copies for each pupil.

*Subjects of Lessons.* — 1. Drawing from blackboard straight lines and curves in combination. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing. One lesson in each division in every week.

1. FREEHAND. — Curves explained: the simple curve, as struck from one centre, being therefore part of a circle; the compound curve, struck from more than one centre, as the ogee curve, or line of beauty. The circle, and its parts and divisions, drawn and explained. The ellipse and ovoid explained. Polygons, regular and irregular. Combinations of curves and straight lines to produce geometric figures; as semi-circles on the sides of equilateral triangle or square. Forms of objects — as kite, top, egg and egg-cup, mouldings, or borders — made by simple curves and straight lines. Vases, teacups, pitchers, glasses, mugs, rosettes, and star-like repetitions. Simple and compound curves, balanced symmetrically on opposite sides of a straight line or axis. Common objects and patterns drawn from blackboard. The same from card copies. Enlargement (from cards) and reduction (from blackboard) in size, explained and illustrated. Forms of conventional leaves, buds, and flowers, drawn and repeated upon vertical or horizontal

lines, or in rosette shape, about a centre. Compound curves in the outlines of pitchers, vases, &c. Freedom and rapidity of work to be aimed at. Tangency of curves with curves, and curves with straight lines, explained and illustrated by examples to be drawn.

2. DRAWING FROM DICTATION. — Polygons of even number of sides, and the circle and its parts, of given dimensions, drawn from oral instruction, without copies or use of blackboard by teacher, except to explain mistakes when the lesson is over. Lines of required length, and regular forms of given size, to be drawn sometimes by freehand alone, and tested by rules and measure; at other times, entirely by the rule and measure. Comparison and analysis of geometric forms, — square with rhombus, oblong with rhomboid. Proportion illustrated and explained, comparing form with form, and number with number. In early lessons dictate to the class a simple form, step by step, and draw it on the board — as each step is described completely — from beginning to end. When the lesson is thus given, examine and correct the work only at the end of the lesson, or at most twice during the lesson. Teach economy of time in working with rule and measure.

3. DRAWING FROM MEMORY. — Exercises already worked under the head of freehand, dictation, or design. Grouping of the geometric definitions; as three positions of a straight line, three triangles, four four-sided figures, the circle and its parts. Or a pattern in which either the circle, or part of it, the oval, or the ellipse (lemon) has been used; or one entirely composed of straight lines. Vases of simple construction, drawn previously from blackboard, and rosettes, in which the element of repetition is simple, are good examples for memory drawing; the element of repetition being easy to remember, and its repetition filling the given space. Have the same exercise drawn from memory several times, to form the habit of remembering; refreshing the memory by drawing the exercise on the board, and correcting previous errors by the pupils, before each repetition of the same lesson. Draw on the board the outline of some simple form, — as a leaf, lemon, or apple, — and leave it for the pupils to look at for a week previous to the memory exercises. When that exercise comes, cover up the drawing, and let the class see by their sketches how much they can remember of the form. When they have done this, uncover the drawing,



and let each pupil compare and correct this with and from the original. Vary the mode and subject of the memory exercises.

4. DESIGN, OR INVENTIVE DRAWING. — Geometric forms in which curves are employed either alone, as in circle, or associated with straight lines, as in quatrefoils or trefoils on the sides of squares or triangles, to be used as the enclosing forms for designs; or the hexagon or octagon, without curvilinear additions. For material, use the leaves of plants, or leaves and open flowers, to be repeated round the centre of the enclosing form an even number of times. All measurements to be made by the inch-measure, and all straight lines to be ruled. Leaves of the simplest kind — such as the heart-shaped trefoil, leaves, buds, or flowers — to be given as materials, and the placing of them suggested in the form chosen. Much help from the teacher will be required by the pupils; and it must be given with the hope of creating interest and confidence and the love of arrangement. At convenient times of the year the teacher might obtain natural leaves and flowers, arranging them to fill geometric shapes, drawn with chalk on the blackboard; the leaves and flowers to be pinned upon the board, or made adhesive by mucilage.

#### GENERAL REMARKS ON THE SLATE-DRAWING OF THE FIRST AND SECOND YEARS IN PRIMARY SCHOOLS.

The practice of drawing in the lower classes of the primary schools is to awaken thought, and give ideas of form; to learn the names by which lines and forms are described and called in teaching drawing; to acquire a little knowledge of the alphabet and vocabulary of the language of form; and it cannot be too strongly impressed upon the teacher, that manual skill or exact knowledge is not here to be expected from the average pupil. It is not well to urge the pupils too much in the direction of making very good lines or very perfect shapes by the free hand alone. They should, however, be taught how to make a good straight line with the ruler in the dictation or memory exercises; and it will be found that this education of both eye and hand will materially help the freehand practice. The sort of line to be looked for is an even one, whether thin or thick is of no consequence; and the test of a drawing should be its attempt to display the truth of a definition or form, rather than the refinement or elegance of its presentation, which is of sec-

ondary importance at this stage. To teach drawing at this stage is to give information.

Geometric definitions should be learnt by drawing them, and not by memorizing the words in which they are described. The correct idea of a line or a form (as, for instance, an oblique line or a square) should come first by teaching what it is not, as well as what it is, appealing through the eye to the understanding, as in object-teaching; next, the drawing of the form; and lastly, further on, the words which define it. The theory of a definition in words is, that it should reflect an image which exists in the child's mind, and not be a substitute for that image uttered by the tongue. The test of knowledge is the drawing.

In the design or inventive exercises a definite amount of recreation and full scope should be given; encouragement and help be generously distributed, but blame never. Even correction of the productions should be the exception, not the rule, remembering that the work is only for the gentle exercise of the arranging or originating faculty, and not for its severe training, which will come further on.

The position of the pupils when drawing, and the holding of the pencils, should be attended to, though no one position is infallible or suitable to all; and they should be allowed and encouraged to turn the slate around so as to find the easiest position in which to draw every part of the exercise. Pencils should never be shorter than the length of palm and fingers of the pupil's hand, and be kept pointed, so that the eye may follow the point in its work. The head should be kept a foot away from the slate, that the hand may have freedom, and the eye take in all the work at once.

The central vertical line of the examples, if the form be symmetrical, should always be the first line drawn, and, as a rule, the longest and most important of the constructional lines next, and then the lines of the form. All drawings to be at least four or six inches in height or width, or as large as the slate will conveniently allow. It is to be understood that the average age and average intelligence of classes will vary as much as the individuals in each class vary, according to their surroundings or circumstances. The programme is therefore to be adapted by teachers to suit the varying condition of classes as well as individuals, and its object be aimed at, even if not at-

tained. It must never be forgotten that the reason for teaching drawing to children so young is to give them information by appealing to the senses, which are as well developed in the young as in the old; and not to secure the skill or accuracy which come of developed powers of perception or reason. To be in a healthy condition, the drawing in primary classes should be on the same plane as the reading or writing, as to performance; and in sense of proportion, it should be on a level with the counting and first exercises in arithmetic. The letters of the alphabet and the numerals must be learned by name, and distinguished by making their forms, *somewhere*; and so also must reading and writing; and the place usually assigned to this is the primary school. This is true also about the elements or alphabet of drawing, — the straight line and curve, and names given to them separately and combined. In no subject is the pupil to be distressed, but encouraged, helped, and comforted, and the desire created to know more and do more for the enjoyment of the thing, just as, when being told a good story, children are more eager to have it go on, that they may know how it ends, than have it broken off in the middle, or be interrupted at the most interesting time.

#### THIRD YEAR. (PRIMARY SCHOOLS.)

Two hours per week. Four lessons of half an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

SUBJECTS OF LESSONS. — 1. Freehand from copies of straight-line forms during first half-year, and of curved forms in second half-year. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing.

1. FREEHAND. — Pupils commence to draw on paper, and learn the use of the lead-pencil and rubber. Review the work done in the first year on slates, — the definitions and straight-lined forms first, and the curved exercises of the second year's slate-work next. Avoid giving new exercises not drawn before; the proper use of paper, pencil, and rubber being enough to teach at first. The pencil is to be held softly in sketching, and the line made at first to be a very faint one. In finishing or lining in the exercises, the pencil is to be held more upright and more firmly, and a distinct line be made. The rubber to be used sparingly. Strive after uniformity of line as to depth of tone and thickness, not too thick. In this branch there must be no ruling of lines, — all to be drawn by freehand; but all

work is to be tested before being finished. Refer to subjects and directions for first and second year's work. Add to these the bud and flower of the Egyptian lotus form.

2. DRAWING FROM DICTATION.—Straight-line exercises first, and afterwards those in which simple curves occur in combination with straight lines sketched from oral description alone; then drawn on the board by the teacher, the pupils to correct their work, if necessary, from the teacher's interpretation, before finishing. When the subject is simple, let one of the pupils draw it on the board, and the others criticise his work as it progresses. Explain the measures of the base and altitude of a simple curve by examples, and show the effect of varying one feature and not the other.

3. DRAWING FROM MEMORY.—The subject to be stated by the teacher in some cases for the whole class to take; in others, each pupil to be left to draw what he can best remember of an exercise previously drawn. Follow general directions given for first and second year, as to subject and method, repetition on paper being the only new work.

4. DESIGN, OR INVENTIVE DRAWING.—Subjects to be given by teachers, such as leaves or front views of flowers, to be used to fill simple geometric forms; as the equilateral triangle, square, circle, or oblong: the unit of repetition to be repeated around a centre, or on a horizontal or vertical line or axis. Expect only childish work, and be satisfied with it.

#### GENERAL REMARKS.

The chief work to be done during this year is to fix or refresh in the mind and memory by a deliberate review—and using new materials, lead-pencil and paper—that which has been learnt before in the previous classes, much of which will have been forgotten; also to commence the practice of drawing upon paper, which is in many ways different from slate-drawing, and needs more attention to individuals in the class. About methods of sketching with the lead-pencil, it may be said that there is this difference between learning to draw and learning to write: in writing, the pupil is taught to make the best copy of a given letter, and to leave it when made without alteration, proceeding to write others in greater or lesser numbers with fresh observation, until the improvement comes. In drawing, this is not the process: for the pupil who makes a

bad line or form is not allowed to leave it, and go on to make others of a similar kind, but should be shown how to correct the wrong line, and thus improve it; so that, when he proceeds to make another, it shall be from the starting-point of his corrected work. If teachers will realize this difference, they will see that the first sketch of a drawing should be made in faint lines, as being the easier to correct if wrong; and they will also see that to forbid the use of rubber for correction is not wise educationally, and, as a rule, is cruel personally to many. Pencils such as H H H or H H, are too hard for children, H or F being usually quite hard enough. Soft pencils in use create a delicate touch. The book may be turned about, and put in the most convenient position in which to draw any part of the exercise.

The examples in books are not intended to dispense with the use of the blackboard for illustration by the teacher to explain principles and show errors of workmanship, but to insure that all pupils shall have accurate copies to work from, and see them equally well at the right distance from the eye. This is impossible when the blackboard is alone used; for only a few pupils can see the examples on it truly, and few teachers with large classes can have time to make such accurate drawings on the board as would serve for copies, without neglecting the individual correction which the pupils should also receive. Very rough impromptu sketches on the board will illustrate principles; and this was the use that Agassiz made of them, not to illustrate drawing, but the *subject* drawn. No one who can make a drawing worth looking at will ever waste his life by making it on a blackboard; and no one but caricaturists and teachers make use of the board rightly,—the one for amusement, the other for rough diagrams explaining principles.

## GRAMMAR SCHOOLS.

### FIRST YEAR.

One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

SUBJECTS OF LESSONS. — 1. Freehand from copies. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing.

1. FREEHAND. — Drawing on paper continued. Abstract curves on large scale. The spiral. Polygons of uneven number

of sides; as five, seven. The progressive order in making drawing studied: viz., (1) construction-lines; (2) sketch of form; (3) erasure of construction-lines, and finishing the drawing. Simple details of historic ornament; as Greek mouldings, &c. Spacing out of work. Proportion arising from subdivision of the axis or main line. ["The whole and each particular member should be a multiple of some simple unit." — *Owen Jones.*] Repetition of parts as shown in mouldings and rosettes. Geometric basis of irregular forms, and geometric construction of objects; such as vases, pitchers, &c. Illustrations of vertical, horizontal, and central repetition in mouldings and rosettes. Explain what is meant by drawings showing two dimensions, length and breadth only, by sketches of solids, showing the three dimensions, adding thickness to length and breadth.

2. DICTATION. — Base and altitude of simple curves further explained, and short exercises given to illustrate the names used. Influence of compound curves in profiles or outlines of objects. Description of compound curves by reference to proportion of bases and altitudes. Reversing of direction of curves, as related to a straight line. Association of curves with straight lines to produce regular geometric figures accurately described by teacher, and drawn from oral direction by pupils.

3. MEMORY. — Building up of the power to remember by adding simple irregular forms to regular geometric figure; as rosettes in square or circle. Memory drawings of the pupil's own designs. Occasional reviews of groups of geometric definitions; as all the triangles, all the quadrilaterals, polygons, the circle and its parts, the oval, ellipse, and spiral. Vary the exercises some times; at others, repeat the same.

4. DESIGN. — Influence of geometric centres in rosettes, the regular line contrasting with the irregular curve. Simplicity of unit for design required. Avoid small parts in unit. If leaves are used for subject, choose such as are adapted by their shapes to fill the geometric forms to be filled, without leaving much uncovered ground. Use tracing-paper to repeat the unit of design. The enclosing geometric forms to be accurately ruled and measured, and subdivisions of the space made in the same way. Teach the best way of holding the rule and pencil when ruling from one point to another, or through two given points.

## SECOND YEAR. (GRAMMAR SCHOOLS.)

One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Drawing from dictation, and design, or inventive drawing. 3. Memory drawing. 4. Models and objects from copies and objects.

1. **FREEHAND.** — Combination of straight and curved lines in ornament. Influence of number on rosettes, — three, four, five, six, eight. Interlaced forms, — circle and triangle. The higher curves applied, — the ovoid in objects, the spiral in scroll-ornament. The conventionalization of natural forms for design. Leaves from copies drawn from nature, and then conventionalized. Simple and compound leaves. Half-tinting by parallel lines to distinguish form from background. Balance of unequal parts — as two sides of a natural leaf — or spiral curve not symmetrical. Details of historic ornament, Roman mouldings; as the echinus, guilloche, &c. Demonstrate the distinction between symmetry and balance.

2. **DICTATION AND DESIGN.** — The enclosing geometric lines which form the spaces to be filled, to be dictated, of a given size, measured by scale. Units of design to be conventional leaves, drawn before as freehand exercises. Use of half-tint in design: (1) on the background; (2) on the ornament. Enclosing-forms to be combinations of straight lines and curves, or double squares and triangles; the ornament to occupy two-thirds or three-fourths of the surface, and the background to be the remainder.

3. **MEMORY.** — The natural leaf, and its conventional treatment to impress meaning of conventionalizing, to be drawn from memory side by side. One object and one original design (drawn in previous years) to be reproduced. Other selected subjects.

4. **MODELS AND OBJECTS FROM COPIES.** — Drawing which shows the three dimensions of length, breadth, and thickness, explained. Model-drawing, freehand perspective. Ellipses and their character, depending on proportion of the two axes. The circle in its three appearances: (1) circle when seen perpendicular to its plane; (2) straight line when seen in line of its plane; (3) ellipse when seen oblique to its plane. Geometric solids illustrating the circle and ellipse, sphere, cone, and cylinder. Regular geometric solids the bases of common objects.

Symmetry of all objects made on a potter's wheel, or turned in a lathe, in whatever position seen, the axis of the object being the central line of symmetry. Tangency of straight lines to curves, as in elements of cone and cylinder to bases. Learn names and definitions of simple geometric solids; as cone, cylinder, sphere, cube, prism, pyramid, &c. Draw from nature an orange, lemon, egg, potato, apple.

### THIRD YEAR. (GRAMMAR SCHOOLS.)

One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Dictation, memory, and design. 3. Model and object drawing from copies and solids. 4. Plane-geometrical drawing with compasses.

1. **FREEHAND.** — Lessons to include tracing and transferring of units and their repetition, as in design. Proper and economic use of tracing paper. Drawing on large scale of historic ornament details. Natural flowers drawn from copies, and both leaves and flowers conventionalized for ornament. Flower-forms for rosettes. The scroll further illustrated by ornamental treatment of spiral line. Natural leaves to be drawn from copies, — the simplest forms of plant, shrub, or tree leaves. Details of historic ornament, Byzantine and Moorish. Practice in perfect erasure of construction-lines, and in even quality of finishing-lines.

2. **DICTATION, MEMORY, AND DESIGN.** — Designing exercises to include instruction in the three features; viz., memory and dictation, as well as arranging or designing. Pupils to draw the unit of flower or leaf from memory, the enclosing-form from dictation. Arrange part of unit in section of space to be filled, and apply practice in tracing and transferring to reproducing the unit and filling the space with accuracy. Half-tint to be employed. One or more solids to be drawn from dictation, and one from memory. The preliminary part of the memory and dictation exercises to be the defining of the solids about to be drawn, and proving the definition by impromptu sketches by pupils.

3. **MODEL AND OBJECT DRAWING.** — Further practice in cone and cylinder, with axes oblique. Objects based on them, in upright positions, with axes vertical; and lying on their sides, axes oblique. Comparison of the geometric views and perspective views of the same objects. Explanation of the terms "plan"



and "elevation" applied to common objects. Changes in appearance which objects undergo by change in position, the eye being fixed; or the object fixed, and the eye changed in position. Draw a vase, cup, pail, bowl, lying on their sides; some looking into the objects, others with the top turned away from the eye and invisible, the bases showing. Show how a model-drawing displays three dimensions, — length, breadth, and thickness.

4. GEOMETRICAL DRAWING. — Use of ruler and scale in exact measurements. Use of compasses, and right method of holding by the hand when working. Definitions of lines, angles, figures, drawn. Constructive problems. Division of lines. Construction of simple forms; as triangles, squares, rectangles. Use of compasses and ruler to produce forms for design. Explain the function of instruments used in drawing to produce accuracy and save time. Compare work done with them to that made by freehand. Show what the ruler and compasses can do, and what they cannot do, in drawing; how much must depend upon the eye and hand which instruments cannot accomplish; and how much the eye and hand can be assisted by the mechanical accuracy of which they are incapable. Thus distinguish between the proper and improper use of mechanical assistance in drawing; and, by recognizing the value of both, to avoid attempting that which is impossible in either alone. Illustrate, by reference to the use of drawing in practical industry, where the good workman uses instruments of precision in order to make his work sound and trustworthy; and where the draughtsman, designer, or artist must depend wholly on his freedom of hand, skill in expressing beautiful forms, and his originality in design, — depending on power which cannot be assisted by instruments. Give correct general ideas on these points, and thus teach the use and avoid the abuse of mechanical help. Drawing taught in the public schools is to be practical, so as to be useful to all, — a help in the workshop, office, studio, designing-room, — and must therefore include all the branches that are employed in profitable industry, and are of educational value. As used in practical life, it must be so taught in the schools. Practical instruction in sharpening pencils for instrumental drawing; cutting to a chisel-point. Holding the pencil nearly vertical, — not so oblique as in freehand drawing. The value of a sharp point on the pencil in the intersection of arcs. Ruling lines through intersections. Distinction in thickness between working-lines and the result-

lines of the figure. Bearing on the centre of an arc whilst striking the curve, and freedom of the pencil-leg of the compasses. Reversing the position of problems, to show that the process of solution is independent of position. Exercises to illustrate the practical use of the elementary constructional problems. Point out generally the influence of geometrical forms in practical art, — in architecture, in designing, in surveying land, in building bridges, and in constructing machinery. Explain the comfort, safety, and protection which true knowledge of science gives us, and how much of this depends on the acquisition of this knowledge and the skill it results in, by drawing, and from scientific drawing of which geometry is the basis, most of all. Make geometrical drawing interesting by treating it as the symbol and vehicle of ideas appertaining to its practice and value, and thus create a love of, and desire for, accuracy in work.

#### FOURTH YEAR. (GRAMMAR SCHOOLS.)

One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Drawing from dictation, memory, and design, or inventive drawing. 3. Models and objects from copy and solid. 4. Plane-geometrical drawing with compasses.

1. **FREEHAND.** — Practice drawing of large details. Ornament composed of non-symmetrical forms. Balance of unequal parts. Refinement of curvature, and tangency of long with short curves. Uniform thickness of line. Details of historic ornament, Moorish and Gothic. Compare feature of an æsthetic and symbolic style. Require the sketching of forms to be made on construction-lines enlarged or reduced from the copy without detailed instructions by teacher. Develop the habit of working from observation of the example without continuous direction from teacher. Encourage self-reliance, and make pupils sometimes call on themselves when in difficulties.

2. **DICTATION, MEMORY, AND DESIGN.** — Dictate the enclosing geometrical forms for design to be drawn with ruler and compasses, and their subdivision into equal parts or units of surface. Require pupils to bring natural leaves to school at suitable seasons to conventionalize them for design. Show the value of contrast between geometric and non-geometric lines in design, — the former in the centres and enclosing-lines of rosettes; the latter in the drawing of the unit, or in single leaves.

Use leaves of more than one size, and front and side views of flowers. Dictate one geometric solid, and give one as a subject for memory drawing, each to be the first defined by the class, either in words or by sketch, or in both ways.

3. **MODELS AND OBJECTS.** — Commence drawing of rectangular solids and objects, — cube, parallelopipedon, boxes, steps, &c. Convergence of retreating parallel lines, — three views of a cube, showing parallel, angular, and oblique perspective as applied to model-drawing. Solids above and below the level of the eye, — rectangular pyramid and prism. Method of finding perspective centres of regular geometric forms. Subjects, — square and triangular frames, hexagonal pyramid and prism, triangular prism, book, rectangular plinth, hexagonal plinth.

4. **GEOMETRICAL DRAWING.** — Constructive problems in angles and triangles. Bisection of angles. Trisection of right angles. Exercises on problems to fill spaces, such as the equilateral triangle and square by circles and arcs of circles. In-scribing figures within, and describing them about, similar figures. Special problems concerning polygons, their construction and subdivision. Circles through given points, or touching given lines. Complex figures composed of curves and straight lines in combination. Increased accuracy of work. For general points of class-instruction, refer to and repeat that given under suggestions for the third year.

#### FIFTH YEAR. (GRAMMAR SCHOOLS.)

One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Dictation, memory, and design, or inventive drawing. 3. Models and objects from copy and solid. 4. Plane-geometrical drawing with compasses.

1. **FREEHAND.** — Illustration of scroll in historic ornament. Details of Gothic, and type-forms of Greek. Compare the symbolic and æsthetic in ornament by examples in the two styles. Seek, by questioning pupils about previous exercises in these styles, to keep alive the memory of, and interest in, the subject. Refer to and explain the names of the styles, and any circumstances in the history or art of the people who practised them. The exercises in drawing to express refinement of curvature and feeling. The practice to economize time by drawing rapidly with increasing accuracy.

2. DICTATION, MEMORY, AND DESIGN. — Dictate a geometrical problem. Memory drawing of a solid previously drawn. Memory drawing of a design made by the pupil when in a lower class. Dictate one solid of given dimensions in a described position; as a cylinder on its side, or a group of two objects, such as a square plinth with cone upon it. In design draw the natural form of a leaf and flower and fruit, and its conventional treatment. Use these as subjects, and strive, after accurate reproduction by tracing and transferring, to fill the space ornamented. Show the effect of double enclosing-lines, parallel to each other, one darker than the other, to enclose the design.

3. MODELS AND OBJECTS. — Alternate practice in cylindrical forms, and objects based upon them, and in rectangular solids, and forms like them. Vase, with axis oblique. Chair and table in angular perspective. Book open, below the eye. Pile of books, with angle nearest the eye. Indicate shade and shadow by half-tint; lines not to be crossed. Exercises from solid to include geometric solids above and below the eye. Subjects, — cross, hexagonal frame, and such other forms as may be available. Draw one object, part of which shall be above, part on a level with, and part below, the eye, to illustrate the direction of horizontal lines in each position.

4. GEOMETRICAL DRAWING. — Construction of polygons on given bases, and in given circles. Inscribing figures within figures, and about them. Geometric design to fill spaces. Exercises in problems. Geometric forms in ornament; as in sculptured tracery, wall-diapers, the ornamentation of constructive forms. The geometric forms which scientific construction takes; as in roofs, bridges, &c. Construction of the ellipse, the ovoid, and the spiral, and the higher curves generally, and their uses.

#### SIXTH YEAR. (GRAMMAR SCHOOLS.)

One hour and a half per week. Two lessons of three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.

*Subjects of Lessons.* — 1. Freehand analysis of ornament and plant-form. 2. Applied design for flat surfaces. 3. Model and object drawing from solids. 4. Perspective, parallel and angular.

1. FREEHAND ANALYSIS. — Review and compare historical ornament previously drawn: (1) of the three ancient styles, — Egyptian, Greek, and Roman, — three or four examples on one page; (2) of the three mediæval styles, — Byzantine, Gothic,

and Moorish, — three drawings, one example of each style, on one page. In plant-form, make a botanical analysis of a growing plant in flower from nature, showing natural leaf and natural bud and flower, and their conventional treatment, for the purpose of design. Follow method of arrangement of leaves on stem, alternate or opposite, as in nature. Use either pencil or pen and ink for these studies, indicating by tinting with lines the relief or roundness of the forms. The plants usually found in class-rooms should be taken as subjects, or a few growing plants in pots be borrowed for this exercise, when none are kept in the school. A part — such as one stem or branch, enough to show the character of the plant and its growth — is sufficient for one exercise.

2. APPLIED DESIGN. — Apply the previous practice in design and the arrangement of form to the decoration of some useful object, choosing those subjects which are ornamented by forms without relief or roundness; as wall-papers, book-covers, encaustic tiles, &c. Use as materials for design the plant-form analyzed in the freehand section. If objects be selected to decorate, — such as vases or pottery forms, — the mouldings or borders of the ancient styles may be employed in horizontal bands, as in Etruscan vases. Tile-patterns, or designs for lace or cotton prints, may be selected as subjects, each pupil to select for himself. Distinction between ornament and background to be made by half-tint of different degrees of depth, according to subject. Designs made to be the full size of object for which they are intended, or a single repeat of the design, if a wall-paper, cotton print, or such subjects be chosen. Two good designs in each half-year may be expected from each pupil; but one from each in that time should be required.

3. MODELS AND OBJECTS. — Studies in this branch to be entirely from the solid. Groups of two, three, or more models, — such as a plinth (rectangular, hexagonal, or circular), a vase, or pitcher, and a frame or ring (square, triangular, pentagonal, or hexagonal frames, or circular ring); or groups consisting of a cube or oblong block, a prism (triangular, rectangular, or hexagonal), and a cylindrical form, as cylinder or cone, or object based on those forms. Half-tinting may be employed to give the effect of solidity or roundness. Avoid attempts at elaborate shading. Foliage from nature, or fruits, or the objects in the class-room, may be taken as subjects, if every pupil can see

them plainly, and at a sufficient distance from the eye. Make those parts nearest the eye more distinct than those not so near, to give effect of roundness and distance. The double cross and skeleton cube for single geometric forms. With the models draw any common object that will group with them and give interest and variety, or give any beautiful object that may be available or procurable by the teacher.

4. PERSPECTIVE, PARALLEL AND ANGULAR. — (a) *Parallel*. — The phenomena of perspective, explained by reference to pronounced perspective effects as seen by the eye; as a row of houses, lamps, view down a street, &c. Method of representing these effects on a vertical plane, called a picture-plane or plane of delineation, by scientific process. Explain ground-plane and picture-plane; the lines employed, horizontal line, line of direction, picture-line; the points, — as point of sight or centre of vision, vanishing-point, distance-point, station-point, measuring-point. Explain difference between a geometric drawing and a perspective view by sketches (1) of a rectangular form, as a flight of steps; (2) of a circular object, as a cup and saucer, or by a cube and cylinder. Explain *scales* as used in perspective; such as the half-inch, third of an inch, quarter or eighth of an inch scales to the foot of actual length. Explain method of finding station-point and distance-point, and use of latter as a measuring-point in parallel perspective; method of measuring the perspective height of objects on vertical lines. Compare this process with what is really seen by the eye in the apparent regular decrease in height of a row of lamps retreating from the eye of the spectator. Subjects for diagrams, — the square, cube, oblong block (parallelepipedon), rectangular pyramid, plinth, floor of square tiles, inside of a room, hexagonal prism and pyramid, triangular prism; circular plane, — (1) horizontal, (2) vertical; cylinder, — (1) axis at right angles to picture-plane, (2) axis parallel with picture-plane. Axioms to be demonstrated: (1) parallel lines retreating from the eye appear to converge to a point, called the vanishing-point; (2) lines parallel with the picture-plane have no vanishing-points; (3) a circle seen oblique to its plane appears as an ellipse. Use of one vanishing-point.

(b) *Angular*. — The use of two vanishing-points. Method of finding the vanishing-points of horizontal lines at any angle with the picture-plane. Method of finding the measuring-point

of any line vanishing to a point. Enunciate the rules; explain them by diagrams; apply them in perspective problems. Repeat and explain these at every exercise. Explain mode of measuring perspective heights on every solid, and on single vertical lines standing upon the ground. Draw a line lying on the ground in the perspective, and making an angle with the picture-plane; find its vanishing-point and its measuring-point, the angle it makes with the picture, and measure its length. Repeat this on lines at different angles. Subjects for diagrams, — the same as those used in parallel perspective, with variations to illustrate the principles taught, and the use of two vanishing-points. Apply the method employed in obtaining perspective views of regular geometric solids to objects, such as tables or chairs of simple form, boxes or books, drawing them from measurement to the scale of the diagram. Sketch by freehand on blackboard all objects to be drawn in perspective, and require the pupils to sketch them on slate or paper, also by freehand, before putting the solid or object into perspective. Create a clear and accurate idea of the work to be done, before attempting to do it by rule. Explain the character of lines to be used in working perspective problems, and difference between working-lines and result-lines, and between visible and invisible result-lines. Use of elevated picture-line; line of heights. Half-tint of parallel lines to be used on one side of solids. The solid models to be always placed before the class when being drawn in perspective, and visible and invisible edges of the solid to be thereby illustrated, and the drawing be made to express what the eye sees, as well as what is not seen. The names of points and lines — as vanishing-points and measuring-points, horizontal and picture-lines — to be neatly lettered as obtained. The distinction between the use of vanishing-points and measuring-points to be made clear by repetition of their use on simple problems as exercises. Occasional drawings to be made from memory to emphasize this distinction. The meaning of working to scale to be frequently explained. Compare geometrical drawing and perspective with grammar in teaching language, — a grammar of the universal and unchanging language of form, — one which is without locality, nationality, or mutability. General and correct ideas must be formed before they can be expressed in lines. Skill in drawing is a consequence of right thinking in the person who makes it, and may be its cause in those who see it;

and, if the cause is controlled, the result must follow. In the whole world of creative or depictive art, there is no such a phenomenon as accident.

#### GENERAL REMARKS.

In the notes and directions under each subject, and in successive years of this course of study, fulness has been attempted where the subjects have been first introduced, or detailed information required. Thus, in the primary and high school departments, the suggestions are at greater length than in any of the grammar-school class-work, except perhaps in that of the last year, where new branches of practice are pursued requiring full description. It is intended that those teachers who have to work upon this plan should have the opportunity of familiarizing themselves with its development by seeing it in a complete form in all its grades from beginning to end in this report. This renders it unnecessary to repeat in every stage and for every class that which has already been formulated for previous classes, and which the teacher may consult for his own; for, however unavoidable it may be to dispense with all repetition, — as, for instance, in describing reviews, &c., — it has been felt that every increase of repetition means decrease of interest.

In the grammar classes generally the subject of drawing has been admirably taught wherever the teachers have been taught; and in all the branches, except perhaps that of drawing from the solid object, most of the difficulties that are felt arise from teachers having too high a standard for manual execution by the pupils. Being new to the subject, they are too impatient of executive deficiencies, and do not give credit enough to the improvement or actual attainments of scholars, nor for that which the struggling effort may have removed from, or left in, the child's mind, — for the new ideas which have been formed, and the extended range which has been developed, and imperfect or defective observation corrected. On the two subjects of teaching elementary design, and the proper use of mechanical aids, testing and measuring in freehand drawing, so much difference of opinion is found, and so much direction needed, that both are here referred to. The question is often asked, How should we give lessons in design?

The design lesson should be given as follows: The teacher should give to each pupil a slip of paper on which to make



sketches of the subject, and commence by dictating a geometric form, in which the design is to be enclosed. Then the subject for the design, consisting of leaves, or leaves and flowers, should be drawn on a large scale on the blackboard, and fully explained by the teacher, the pupils copying the forms on their papers. They should be allowed to take these memoranda home with them, and asked to make a design during the coming week, and bring it with them on the day for the designing lesson. The teacher should examine these returns carefully, and allow the pupils who have produced good ones to draw them in their books. And those which are either bad, or capable of much improvement by alterations, should be criticised, and the deficiencies removed by the pupils under the teacher's directions. When made as satisfactory as can be reasonably expected from the children, they should then be drawn in the books.

The reason why this week's consideration of a design by the children is necessary will be at once apparent to every teacher. It is impossible to sit down at stated times, and design a pleasing pattern; for this is labor which demands time and thought to arrange ideas and try experiments, building up the whole by repeated efforts and fresh observation. A week's interval gives time for this, and is not a great infliction on the child, but rather a pleasing employment of leisure-time.

At the risk of falling into the repetition, I have already deplored, and with the hope of finally creating some definite ideas on a subject not quite new, the question of ruling and measuring must also be considered.

In freehand drawing, the hand should be trained to do without the ruler in drawing straight lines, and the compasses in striking circles; but, after the hand has done its best by the guidance of the eye, its work should always be tested by mechanical tests, those being alone to be wholly relied upon.

If you want pupils to get accustomed to work with accuracy, make them always correct their inaccurate work step by step, never letting a wrong measurement pass, until the pupil feels that it is of no use doing work which will have to come out again, and that will soon result in a careful procedure from the first.

In this matter we have to be guided very much by what practical artists and practical mechanics and draughtsmen

would do. However well trained their eyes may be, they never wholly rely upon their vision when geometric truth has to be expressed. And, though I would never allow a child who could draw a practically straight line to rule it first before he tried to draw it by freehand, I would invariably require the test to be applied, and corrections made, so that finally the result should be practically right. The same applies to exercises in model-drawing. A good draughtsman does not want a ruler; it is inconvenient to him: but that is because his eye is trained enough to rely upon in all freehand work. But even he at once resorts to its help when accuracy is required, thus correcting his imperfect work by a perfect test; and my plea is, that we cannot deny the use of such means of testing their work to young children, as practical and educated draughtsmen find indispensable to make their work of practical use in industry.<sup>1</sup>

The names of colors, their original and composite characters, will form part of the instruction under other headings, but may fitly be referred to, also, in connection with lessons on form. Such terms as "primary," "secondary," and "tertiary" colors, the product of the admixture of primaries and secondaries, the common and artistic names given to hues, tints, and shades of the three grades of colors, complementary and harmonizing colors and tints, with information of the proportions of surface in which they are agreeable to the eye, should be explained, with the assistance of diagrams, in all the classes.

<sup>1</sup> In support of what I have said about testing work by mechanical means, — that is, measuring the proportions of what has been done, and comparing them with what we know to exist in nature, or be true in the copy, — I will quote what the late William M. Hunt of Boston said in reply to a pupil. The Italics are precisely as in the published instructions which appeared in "The Worcester Palladium:" —

"May I use a plumb-line?" *May* you! I *beg* of you to do it! And now, because I've *told* you to do it, don't go and forget it! People think it isn't smart to measure and take pains. Well, let such draw fine things without — if they can!

"Michael Angelo measured; Raphael measured. Albert Durer passed many years trying to get at a system of measurement for the human figure, carrying it so far that he found certain parts of the body to be so many lengths of the eye. One-half of the art of the Egyptians is in their wonderful knowledge of proportion; but the *Yank* thinks it is smart to sit down and *do* horrible things *without measuring*."

This is, perhaps, a picturesque way of illustrating a principle of teaching which is much discussed; but it has the merit of being true, and every educated professional artist or teacher knows it to be true, and will say the same as Mr. Hunt did.

## HIGH SCHOOLS.

## FIRST YEAR.

Two hours per week. Two lessons, one hour each. Pupils draw on paper and blackboard; teachers, on blackboard and paper.

*Subjects of Lessons.* — 1. Perspective, parallel and angular. 2. Models and objects shaded with (a) point and (b) stump. 3. Freehand analysis of plant-form and historical ornament. 4. Applied design.

1. PERSPECTIVE, PARALLEL AND ANGULAR. — Review the principles of perspective delineation given in the highest grammar classes, on different objects. Find the distance to right or left of spectator, and distance into the picture of points lying on the ground. Measure heights of vertical lines standing on the ground. Draw cone and cylinder with axes vertical, bases on the ground, no part of solids to touch the picture-plane. In parallel perspective (one vanishing-point), draw groups of solids, such as (1) a plinth, with prism standing on it, and terminated by a pyramid, all rectangular solids, with axes continuous and vertical; (2) a pyramid standing on a plinth; (3) a flight of steps; (4) a double cross standing on a cube; (5) a circular plinth or disk, with a frame (triangular, square, or hexagonal) standing upon it; (6) hexagonal plinth, with cone upon it; (7) skeleton cube. In angular perspective, take the same subjects and dimensions, — cylinder, hexagonal, and rectangular prisms, with horizontal axes making angles with the picture; chair, table, and box; open door.

Demonstrate by diagram that a measuring-point measures the perspective length of a given line. Demonstrate that the method of measuring perspective heights is true by the problem xxxiii., Euclid, book i. Examples in parallel perspective to include an interior with objects previously drawn; as furniture, table, and chair. Show open doors and cornice; also windows and fireplace. View down a street with houses on both sides. An arched passage with tiled floor; floor, octagonal and hexagonal tiles. And similar problems.

In drawing a circular ring, square in section, explain what is meant by “the procession of the diameter” applied to the inner concentric circle of the ring.

2. MODELS AND OBJECTS. — (a) *Shading with Point.* — Explain meaning of terms “light,” “shade,” “shadow,” “cast shadow,” “reflected light,” “high light,” and “glitter-point.”

Illustrate the relative depth of the tints by examples and by objects, — sphere and cube. Explain half-tint, cross-hatching, and stippling, by three separate exercises; also flat tint and gradation by straight lines and curves used in shading, — (1) on three visible faces of a cube; (2) on a sphere or cylinder. Learn principles of light and shade by copying good examples of geometric solids, and objects based upon them, — cone, cylinder, and sphere, vases, pitchers, teacup and saucer, fruit-forms, cube, plinth, prisms, pyramid, frames, crosses, rings, boxes, &c.

Illustrate bad work by sketching on the board (not to be copied by the pupils) examples of crossing the shading-lines wrongly in cross-hatching, making the lines irregular or uneven, losing the lines too much, or leaving them showing too much. Show how to remedy bad shading, or improve it, by erasure or stippling. Direction of shading-lines to express the surface and position of forms; as vertical lines in vertical planes, curved lines on round surfaces.

Explain terms used; as breadth of light and shade, *chiaroscuro*, repose, gradation from light to dark, middle tints, light against dark, and dark against light, contrast and harmony of depths. Highest light and darkest shadow in a subject. Values of masses in a composition. How color can be suggested by its value in the scale of light and shade. The similarity or difference in the progress from the highest light to the deepest shade on a white and a dark object.

(b.) *Shading with Stump*. — Explain nature of materials used, the leather and paper stump, the chamois-skin, the erasing-point. Method of using shading-material, soft crayon rubbed to a powder, or the French sauce, on paper. Repeat and review principles of light and shade explained at commencement of point-work; also exercises on rubbing flat tints, three examples, — light, middle, and dark. Gradation from light to dark, — the first on three faces of a cube; the second on a sphere, cone, or cylinder. Show method of lightening heavy work, and strengthening the depths of shadow and cast shadow. Working with stump to a straight line, erasing points of light, or recovering lost forms by erasure. Subjects to include vases, white objects, double cross, and skeleton cube.

3. FREEHAND ANALYSIS, BOTANICAL AND HISTORICAL. — The growing plant in flower, or part of it, to be drawn from nature, showing all the features of natural growth (six pot-

plants in a class-room would be sufficient), — arrangement of leaves on stem, flowers, and buds. Then draw front and side views of the same features geometrically arranged, conventionalized, and displaying materials for design, and ornamental capacity of the plant. Keep the relative sizes of leaves, buds, and flowers. Let the drawing from nature and the conventionalized drawings be made on the same page in the book, or on the same sheet of paper, for comparison. Both of these to be of the natural size if a small plant, and to be reduced in proportion if too large. The shade and shadow which give the effect of roundness may be indicated by tinting with lines on the study from nature, but not on the geometrical treatments. Apply the practice in shading with point to the study of the growing plant, or use the stump to indicate tint and shade if preferred. In historical analysis, select groups of the same features in several styles; as, for instance, the sculptured foliage, or the enriched mouldings, or the capitals of columns. Draw them upon one page for comparison and analysis.

4. APPLIED DESIGN.—Employ the plant-forms before analyzed as subjects for the designs. Select the object of design; as porcelain or pottery, wall-paper, lace-collar, tiles, &c. Explain that ornament for a flat surface should not suggest relief or roundness; shading should not enter into such designs; that designs for horizontal planes (floors and ceilings) should be radiating from a point or from all points, and not have leading lines running prominently in any direction, except in borders; that designs for vertical planes (walls) should have a vertical axis or tendency; that symmetry, conventionalism, and repetition of details, should form the features of design for industrial or decorative ornament for subordinate purposes. Design the unit of repetition, whether a quarter, sixth, or half of the complete arrangement. Trace, transfer, and complete the design by repeating the unit as often as it occurs. Add the half-tinting by lines or stump to distinguish or emphasize parts. Combine geometric forms and lines with the conventionalized natural forms, to give value to both. When the element of repetition is simple, use the smaller plants and flowers of simple character, as those of the lily or rose family.

Strive to teach the principles of consistent good taste in design. The pupil's work should show these, rather than be impotent yearning after originality. If the pupil has been led

to apply the laws of good design and pure taste, and thus acquired some perception and knowledge of the fit and the beautiful, originality may be developed from this, if it has not already displayed itself. Horrible originality is not to be sought after, nor of value if discovered.

### SECOND YEAR. (HIGH SCHOOLS.)

Two hours per week. Two lessons, one hour each. Pupils draw on paper and blackboard; teachers, on blackboard and on paper.

*Subjects of Lessons.* — 1. Perspective, angular and oblique. 2. Models and objects, shaded from solid. 3. Freehand analysis of plant-form and historical ornament. 4. Applied design.

1. PERSPECTIVE.— *Angular.* — Continue exercises in angular perspective on problems at a distance from picture-plane. Explain use of half measuring-points and method of practical work when one or more vanishing-points fall outside the paper; also method of measuring great heights at far distances. Practical method of putting any curved line into perspective. Use geometric plans and elevations of grouped solids to put into perspective. Illustrate the reverse process of taking an object out of perspective, and making a geometric plan and elevation of it to scale. Give simple problems in the perspective of shadows on subjects such as the sphere, cube, cone, cylinder, and cross on horizontal, vertical, and oblique planes. Draw the illustration proving that a circle seen oblique to its plane appears as an ellipse; also the demonstration that the long diameters of concentric circles, when seen in perspective, are not identical. Explain why this is called “the procession of the diameter,” and affects the form of concentric circles and objects based on the cone and cylinder. Show the perspective of a regular pattern, as a fret, turning round a curved surface, as a cylinder or a vase.

*Oblique.* — Three vanishing-points. Explain the theory of vanishing-planes and vanishing-lines; the vanishing-point of an oblique line, and method of finding it when the position of line is given. Demonstrate the accuracy of the process by a square plane perpendicular to the ground-plane, and making an angle with the picture of forty-five degrees, its diagonal vanishing upwards at the angle of forty-five degrees with ground. Show method of finding the measuring-point of its vanishing-point, and measure the diagonal. Compare this measurement with the diagonal of the geometric square. Draw right-angled trian-

gles, the hypotenuses forming oblique lines — first, of forty-five degrees, and, second, at sixty or thirty degrees — with ground and picture. Apply this practice with one oblique vanishing-point to drawing of square planes, both diagonals making angles of forty-five degrees with ground-plane. Draw a book in angular perspective, with its half-open cover in oblique perspective; rectangular prism, cylinder, and cone, with oblique axes. Put the box, table, and chair of the last year's problems drawn in angular, now into oblique, perspective; also single cross and double cross in required positions.

Combine in one drawing (*a*) the interior of a square room in parallel perspective, (*b*) a table and chair in angular perspective, (*c*) a leaning chair, or cube on the table, in oblique perspective. The floor of the room to be tiled, and the principal feature of the floor to be a large circle three-fourths of the width of the room. Also the exterior of a house, obtaining the principal lines by rule, and adding accessories of foreground foliage, details, &c., by freehand.

2. MODELS AND OBJECTS. — *With Point.* — Repeat and review the principles of light, shade, and shadow, and explain fully the meaning of chiaroscuro applied to drawing in light and shade. Demonstrate that the shadow on a white object is not black. In all cases see that the outline-drawing of the object is in true perspective before the shading is begun. The light upon the object must come from one source, no cross-lights being permitted. The cube and sphere drawn from copies last year to be the first exercises from the solid. The cube to illustrate light, shade, and shadow, and cast shadow on the three visible faces and on the horizontal plane upon which it rests. The light to be represented by faint half-tint of vertical parallel lines, not crossed; the shade, by vertical and oblique parallel lines, cross-hatched; and the shadow, by the same lines as the shade, the shadow having the addition of stippling to reduce the color of the paper. The cast shadow, a degree darker than the shadow, to be begun with firm horizontal lines, and finished, like the shadow, by stippling. In the sphere, illustrate the same progress from light to dark in perfect graduation, adding the reflected light between the shadow and cast shadow, and the highest light, or glitter-point. Groups of solids having one common object, such as a pitcher or fruit of irregular form, to be taken as subjects, preference being given to

those which are either white or of a light color. Strive for the effect of roundness or projection, so that the shaded object may appear to stand before its background. In drawing backgrounds, let the darkest part be near the lightest side of the object, and the lightest part contrast with the shady side of the object or group. Groups of two objects, — such as the triangular frame vertical with the cone, its apex passed through the frame and base oblique; the hexagonal frame and cylinder leaning in an oblique position through the frame; double cross, with sphere resting on it.

*With Stump.* — Objects of a darker hue may be chosen as subjects for stump-drawing from solid. Groups in which colored forms contrast with white; as a white vase and fruit, — orange, lemon, apple, cocoa-nut, grapes; or a colored vase on a white plinth, rectangular, circular, or hexagonal, and a sphere or cone. Foliage of a simple large kind, or a single flower, may form part of the group, or a large white shell, or shell of light color. Good pottery and porcelain forms will give variety to the groups, or may be used as subjects singly. In treatment of the subjects, avoid heaviness of effect in masses of dark tinting, and see that there are three distinct degrees of depth in the group of objects; two giving contrast, and three harmony. Have one vase with oblique axis in one of the groups, to apply and revive the knowledge gained in previous classes about drawing objects in such positions. Every object drawn singly, or objects grouped together to be relieved by a background, to assist in obtaining roundness of effect, and give value and character to the objects. Show how to get effects of rough surface by erasure, or by skilful handling of the stump. Seek after transparency and clearness of tint and shadow. On glazed or polished objects, observe the reflection of adjacent objects, and the high lights, or glitter-points, on each. In shading colored objects, rub a medium tint over the whole form, at first, take out the lights, and add the shades and shadows. The broad shades and shadows to be laid in first, to obtain the general effect; gradation and detail to be added afterwards, to express individuality of character in parts. Explain the difference between a sketch which is the first condition of a drawing to be finished, and a sketch which is always to remain a sketch; what should be attempted in each, and what avoided; and how much of the whole truth each is intended to express.



3. FREEHAND ANALYSIS, BOTANICAL AND HISTORICAL. — Take as subjects the lily and the honeysuckle, and show by geometric drawings the ornamental treatment of these subjects, as the lotus and anthemion in the Egyptian and Greek styles. Draw details from the historic sheets side by side with the conventionalized parts of the flowers. Climbing or parasitical plants, — as the ivy, passion-flower, hop or vine, scarlet-runner, sweet-pea, or morning-glory, — showing arrangement of leaves and flowers on the stem, front and side views of leaves, buds, and flowers, and variety in size of leaves on the same plant. Draw the plants from natural specimens growing in pots, and to be found in the class-rooms, or to illustrate lessons in botany. The study from nature may be in outline, or shaded with point or stump; the plant and its botanical analysis to be on one page or sheet of paper.

In historical analysis, take as subjects a surface and a sculptured moulding of any three styles; or a detail common to many styles, such as the fret or labyrinth, — showing the difference or similarity of treatment by comparison, as displayed in the different styles.

4. APPLIED DESIGN. — Select objects to be ornamented, — as vase-forms, plate-borders; porcelain objects, — as pitchers, bowls, teacups; glass, — as goblets, globes for gas-brackets, encaustic tiles. Use as subjects the plant-forms analyzed in this year's course. Or take the details of historic ornament for borders and lines of enrichment in the style of Greek vases; as the fret, guilloche, wave-scroll, echinus, astragal, anthemion of Greek ornament, or the same features with the acanthus foliage of Roman ornament, or the conventional foliage and details of the Gothic or Moorish styles. If the designs be for panels or vertical borders, or to be the ornament of spandrels or brackets, or for metal-work and scroll-ornament, use the materials found in creeping-plants with long stems, named as subjects for botanical analysis. Designs for carved ornament in architectural enrichments externally used, or to decorate a piece of furniture — as cabinet, bookcase, fireplace, chair — or any useful objects. Those which are in the round, and require sculptured ornament, in one color, or to be ornamented by few and simple colors, as named above, to be chosen in preference to others. Emphasis to be laid on the moderate use of ornament, and its subordination to the use of the object ornamented; also that

the true aim of good design is to increase the beauty and attractiveness, without limiting the practical value of an object; that good design recognizes the nature and capability in manufacture of the material in which an object is to be made, as well as its use, as a guide for the decoration suitable to it; that design for wrought and cast metal cannot be identical, if the limitation and capacity of the materials be considered; that the material of wood, which is fibrous, and of stone and marble, which are granular, must be differently treated in design; that printed or stamped and woven fabrics have varying capacities to display design, requiring special consideration in their treatment. These first principles may be illustrated by reference to good and bad instances of design coming within the observation of teachers and pupils. Explain to pupils the propositions of Owen Jones concerning design, to be found in an appendix to this scheme.

#### THIRD YEAR. (HIGH SCHOOLS.)

Two hours per week in one lesson. Pupils draw on paper and blackboard; teachers, on paper and blackboard. Special class-room with casts and examples required.

*Subjects of Lessons.* — 1. Historic ornament, in monochrome and color, from the cast and examples. 2. Light and shade, with brush, from examples, cast, and nature. 3. Color and harmony of proportions from diagrams, examples, and nature. 4. Applied designs.

1. HISTORIC ORNAMENT. — *In Monochrome.* — First exercises with the brush in laying flat washes or even tints in one color, — sepia or India ink, — and gradations from light to dark. Apply this to drawing from the plaster cast examples of good historic ornament, sculptured, such as the high-school drawing-class room usually contains. The scroll of Lysicrates; the antefix of the Parthenon; the fret, anthemion, echinus, and astragal, and guilloche mouldings of Greek ornament; the acanthus foliage and mouldings and scroll-mouldings and rosettes of Roman; the tracery, foliage, and capitals, and enriched or geometric mouldings of Gothic; the incised wall-ornament of Moresque; or the various treatments of relief-ornament in the Renaissance, — would all be suitable examples. With previous practice in drawing and shading, and only the use of the brush to contend with, the pupil may be expected to draw the easier casts in two or three lessons. Apply the knowledge of light and shade, gained in the lower classes from regular geometric and other forms, to

this subject. Require each pupil to point out light, shade, shadow, reflected light, and cast shadow on the cast, and upon details of it, before beginning to shade. Have a good example of cast-drawing in water-color monochrome, by the teacher of the class, suspended in the room for occasional reference. Teach the pupils to lay in shade, shadow, and cast shadow, in one broad wash, where they come together in large masses, so as to get the general effect before attending to details. The greater the number of pupils that can be placed, to see one cast, the better, so that the teacher may give general instruction to the group drawing one example. The teacher should have a drawing of his own of one subject, drawn in stages to show the progress of the work from the first wash to the finish, about four degrees of advancement, shown in four sketches, to refer to when questions about process are asked. The more the pupils can be kept together working on one stage of the drawing, the more time will be available to the teacher for individual correction, as well as general instruction. The highest form of teaching is to develop self-help; and it is as destructive to education to deluge a pupil with over-instruction, as it is to let him perish for lack of information. A judicious proportion of help, and absence of help, from teacher to pupil will develop both progress and self-reliance in the latter, and give scope for the improvement and growth which alone come from within.

*In Color.* — The ornament in color should be from the published examples of styles, such as those of Owen Jones, Racinet, and others. Typical examples of colored or surface ornament should be chosen from a definite number of styles, and then be drawn by the pupils on one sheet; a small example of three or four styles being preferable to a large subject in one style, which would occupy as much time as the smaller ones. This work can be accomplished best by class-teaching, all the class working from a large diagram of each example prepared by the teacher; the mixture of tints, and the order of proceeding in copying the example, being directed by the instructor from the blackboard, or in front of the large diagram, — individual instruction being required only to correct departure from the general directions. As a rule, avoid mixing colors or tints for individuals; but produce the tints required before the whole class, whilst giving general instruction to all; and require each pupil to produce the same colors by his own skill,

and following the directions of the teacher. The exact matching of delicate colors cannot always be obtained; for all people are color-blind to some extent.

2. LIGHT AND SHADE.— The knowledge of using brushes and color in the exercises of historic ornament will prepare the pupils for the more æsthetic study of forms, such as are to be found in the human figure, architectural master-pieces, or landscape compositions. Busts, statuettes, hands, feet, masks, or subjects in bas-relief of the human figure, may be undertaken in this department; the pupils being seated for study round the subjects in as many groups as are necessary for good views of the casts, and receiving both general and individual instruction upon them. (It must be understood from the first, that a properly lighted class-room, fitted with suitable examples for study, is as necessary to the study of the advanced departments of elementary instruction in drawing, as are the chemicals and furniture in a laboratory for the study of chemistry.)

Arrange the lights so that they do not interfere, and never allow any cast to receive lights from two sources. Bas-reliefs and profiles of busts are easier to draw than statuettes, or front views of the bust. Remember this in placing the pupils, providing for each according to his powers or needs. In landscape studies in one color, the system of class-instruction followed in teaching colored studies of historic ornament will also apply here. One large study completed, with three antecedent stages to place before the pupils and show them the steps by which the final result is attained, supplemented by actual illustration before the class, and full explanation of the processes, will be found thoroughly economical of the teacher's time, and produce the best results. The drawing taught in the high schools is as elementary in its grade as that taught in the primary schools, and its object is not to make artists of a few, but to insure that all shall learn to see and think in a true and refined way. This may be attained in drawing as it is in the classics by a whole class studying the same book; for, though all may be learning the same thing, it will be something new to each pupil. For studies from nature or still life, single objects, as fruits of one color, — such as the orange, lemon, cocoa-nut, — shells, &c.; or groups consisting of a vase, a piece of fruit, or a flower, and any third object which will harmonize with them, having a background of drapery to assist in getting the effect. In this

year's work, geometric solids should not be taken as subjects, the training in the principles of drawing having been sufficient in previous years. Now, these principles should be applied to the representation of irregular forms based on the regular, which will include all natural forms that can be seen by the eye. Further explain chiaroscuro, and the exact position of studies in monochrome in the scale of artistic representation, as embracing two of the three characteristics in the appearance of an object. Thus to the eye a natural object may appear to have — (1) form; (2) roundness; (3) color. In art its form being suggested by outline of contour and surface (1); its roundness or solidity, by light and shade (2); its color, by tints (3). To express it fractionally, outline, without shade or color, gives us form, which is one-third ( $\frac{1}{3}$ ); light and shade with outline, but without color, gives us form and roundness, which are two-thirds ( $\frac{2}{3}$ ); color, with outline and light and shade, gives us form, roundness, and color, which are three-thirds ( $\frac{3}{3}$ ) of the truth, if each fraction be true. By this and similar illustrations, explain the order in which the study of representation should be followed, and the relative importance of each element in the expression of truth. Pupils must be taught what to look for in an object before they can see it. Even when it is before their eyes, they must be made to see with their brains, as well as to look with their eyes. The sense of sight, and faculty of vision, are not the same things; the first being physical, and the second mental, both combined being true perception. For this reason, it is proper to study form by commencing with a knowledge of that which is simple and regular in line, plane, or solid, — by that which can be formulated and defined, and which does not change. Taking this as a groundwork, it is possible to see and estimate the complex and irregular, and fix the precise degree and character of the variable; so that individuality may be perceived and expressed, even in its most subtle developments.

3. COLOR. — *Diagrams.* — The use of color should be the last subject studied in the highest grade of primary schools, — the high schools. The names, and to some extent the admixture, of colors will have been taught theoretically from the kindergarten upwards through the school course. In the last year of the high-school course, the elements of color should be taught practically by handling and using the pigments which represent colors. Begin by requiring each pupil to draw and

paint a diagram of color showing the primaries and secondaries, and a second showing the secondaries and tertiaries. A third diagram, which gives the proportions of surface in which primaries, secondaries, and tertiaries harmonize, will complete the elementary or diagrammatic study of color. Full explanations of tint, tone, hue, shade, neutrals, self-tints, hot and cold, advancing, and retiring colors should be given, and, if time permits, illustrated by examples. Diagrams on a large scale should be suspended before the class, and copied by each pupil. This preliminary work is required to save the time of both teachers and pupils, and to make the study of color further on an intelligent application of principles, and not a series of melancholy experiments. This work to be entirely class-work, the same for all.

*Examples.* — Examples which are to be used as copies by pupils, and in which this knowledge is illustrated, should be of objects with pronounced coloring; such as fruits or flowers, or any subject painted from nature, with or without backgrounds. Individual tastes may be consulted as to subject; and the same or an equal amount of instruction in principles and practice can be given upon the drawing of a human figure or head, landscape effects, still life, or animal form. If good original works in water-color can be obtained for copies, so much the better; but good reproductions of the best works, if made for the purpose of instruction, are far better than poorly colored or wrongly drawn originals, just as a good cast of the Apollo would be better than the original figure-head of a vessel, and a line-engraving or photograph from the Sistine Madonna would be better for us than a nondescript daub of undoubted originality, if our purpose is to study the beautiful.

*Nature.* — Studies from nature of objects which are colored naturally follow the principles learnt in the diagrams, and their illustration from applied examples. Subjects which do not change either in form or color — such as pottery-forms, or well-chosen common objects in any material — should be the first exercises. When a reasonable amount of expedition has been acquired, then more perishable subjects — such as fruit, flowers, or still life — may be attempted. Single objects, with backgrounds either of drapery or colored tiles or wood-work, are the most suitable when lessons are only given once a week; and it is better for several pupils to study from the same subject, for reasons before explained. It is to be never forgotten that the

works produced are to be studies, not pictures; and that the exercises in drawing, even in this class, are to be on the plane of original compositions in language, or solutions of mathematical problems; i.e., like school-work in other subjects. Intelligent, expressive work is to be sought for, and the fullest and most generous instruction imparted; but the practice of finishing highly in any one branch of drawing belongs rather to the education of the specialist or professional artist than to the high-school pupil, and it should not therefore be attempted.

General information concerning the harmony and contrast of color should be given at every exercise, the lesson being regarded as the means or occasion for this instruction. Complementary colors; simultaneous, successive, and mixed contrasts; use of gold in ornament; ocular spectrum; the harmony of tints, tones, hues, and shades; how color becomes perceptible to the eye; what results from the separation of the rays of light, its decomposition and recomposition; what is meant by the absorption of certain rays and reflection of others; the difference between color and pigments used in painting; colors of the rainbow; position of primaries, secondaries, and tertiaries in nature; proportion of surface which they cover in nature and natural effects; the mental impressions made by positive and neutral colors; influence of violent contrasts or false harmony upon the eye,—information on all these points, fortified by examples which illustrate them, will enable the teacher to assist thoughtful and intelligent pupils, and lead others to think and become so.

4. APPLIED DESIGN.—In this class good examples of applied design should be placed before the pupils in the form of manufactured goods; thus, sheets of lace, paper hangings, cotton prints, specimens of carpet patterns, encaustic tiles, oil-cloths, porcelain, pottery, or glass decoration,—the actual objects being the most suitable for the instruction of older pupils, who are expected to produce designs in color. Illustrated catalogues of the great international exhibitions are suggestive material also with which to teach design. Each high school should have a small collection of objects and examples in which the purest taste and ripest skill in design are displayed, as well as a library of illustrated books. Two or four designs in a year should be expected from each pupil,—the full size of the objects, or the full size of the unit of repetition, if the design should

be for carpets, wall-papers, &c. Designs for lace, jewelry, or subjects in which the work may be fine or delicate, are best expressed by solid color on dark backgrounds. As in all previous classes, the resources of design are the materials to be found in nature, and the type-forms of good historical ornament, the element of color being added. Avoid over-elaboration, pictorial effects, the direct imitation of nature, or redundancy of details. Teachers should study the treatment and employment of ornament in Greek, early Gothic, and some periods of the Renaissance work. Few pupils can be expected to display great originality in design any more than in other branches of education. But all will show some, if the opportunity be given to them, accompanied with sound instruction in principles and judicious encouragement. In colored designs, avoid brilliant colors; and, as a rule, the tertiaries with their tones and shades will be best for floor-decoration, the secondaries with self-tints and small features in gold for wall-designs, with tints of the primaries for ceiling-decoration, relieved by tones of the neutrals. Bright colors should only be used in small quantities, if repose be sought for.

#### GENERAL REMARKS.

Teachers of drawing in high schools, whether special instructors or the regular teachers, should realize that drawing, like every other subject of an elementary and general education, should be taught in class. The subject, when advanced from the grammar to the high school, has not changed its nature or its methods, only its place and materials for study, and widened its range. The use of the blackboard to illustrate principles and methods of work, and examples of form, is indispensable to good teaching of classes in the primary and grammar schools; and the use of diagrams on paper, to illustrate light and shade and color, for the instruction of high-school classes, will be found equally indispensable to good teaching in the high schools. This involves on the part of the special and regular teachers a familiarity and skill with the use of the crayon and brush, which may not be usual, but is certainly necessary, and can be acquired as surely as the use of the chalk on blackboard has been already learnt by the majority of teachers. Special instructors in the public schools have the responsibility of setting an example in this matter to the regular teachers,



and of showing them that sound knowledge of a subject may be displayed in any vehicle and in every process. Such diagrams in light and shade and color, as have been referred to in this high-school course, are not often available; for the subject in this stage of its development, and adapted to high schools, has not yet been commonly taught. It devolves upon the teachers, therefore, to make them for their classes; and they will teach the subjects better for the exercise.

In this stage of the study, examples of a high class placed before each pupil may be as necessary for economical as well as educational reasons, as they are in the lower stages; but such examples, without the personal and vitalizing influence of the teacher drawing before his pupils, and meeting their difficulties by his example and his skill, will not be sufficient. Working without good examples is extravagant, and wasteful of time and opportunities, besides being indescribably stupid; relying upon examples ready made, without the life which comes from work before the class and the result of personal work done for the class, is worse. The true way is to make use of all that has been done in the past by others of great skill, experience, or knowledge, as material with which to help our individual efforts in teaching, but never to fall back upon that as a substitute for such efforts. Good teachers, whether young or old, must expect to spend as much time out of school in thought and work *for* their classes, as they spend in school *with* their classes; and success of the highest order cannot be purchased at any cheaper rate, because it never costs less to obtain it. That this is understood and expected is shown, by the small number of hours per diem that school is kept, and the frequency of vacations and holidays. Teachers must work out of school as well as pupils; for without such work neither can attain self-reliance in work or economy of time in school-hours: and the best teachers invariably do so.

It is presumed that pupils have learnt *how* to draw in the schools and classes below the high-school grade; and it is as unreasonable to teach elementary drawing in its lowest stages in the high school, as it would be to teach reading and writing in them. What is expected to be done here is to apply the power of drawing already acquired to the study of higher stages of the same subjects on the high-school plane, which should show as much progress in drawing as advancement in

other subjects of general education. This involves higher attainments by teachers, and is, as a rule, recognized by higher emoluments for service. Though it is not practicable to apply this standard at once in schools where the scholars have had no previous preparation, or the teachers no opportunities of a higher education, it is both reasonable and practicable to do so where this has been or is the case, and where special teachers are employed; always supposing that proper examples for study are furnished, if attainable, and a suitable class-room with fittings and lighting adapted for art study be provided in the high school.

It is but just to those special teachers of drawing, who have done much towards bringing about the possibility of such a scheme as this, to define their true position in a public-school system, their false position having been fully described. *First*, For some time yet the highest class in high schools must be personally taught by them. *Second*, Their final work in public schools will be supervision of the work of the regular teachers in all classes, and examination of the pupils. *Third*, Normal instruction to teachers so long as it is necessary. *Fourth*, Teaching the evening drawing-classes, or schools of art as they will be eventually called.

In such legitimate and useful work there is a wide field, every large city requiring several of such trained teachers; and every city or town will find it necessary, economical, and profitable to have one such specialist in the public employment, upon whom it can rely for guidance and service. Now that drawing is so extensively taught in the public schools, it should be taught well and under competent supervision, and not be made the subject of experiment. Then schools of art are inevitable, and such schools are the true homes of the special teacher of drawing.

## EPITOME OF COURSE OF INSTRUCTION.

FOR ALL GRADES.

## PRIMARY AND INTERMEDIATE SCHOOLS.

*Two hours per week. Four lessons, half an hour each. Pupils draw on slates and blackboard; teachers, on blackboard.*

## FIRST YEAR.

*Subjects of Lessons.*—1. Drawing from blackboard straight lines and their combinations. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing. One lesson in each division every week.

## SECOND YEAR.

*Card copies for each pupil.*

*Subjects of Lessons.*—1. Drawing from blackboard straight lines and curves in combination. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing. One lesson in each division in every week.

## THIRD YEAR.

*Pupils draw on paper and blackboard; teachers, on blackboard.*

*Subjects of Lessons.*—1. Freehand from copies of straight-line forms during first half-year, and of curved forms in second half-year. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing.

*All the classes in every year.*

One-fourth of each class to draw the exercises on the blackboard at every lesson, so that each pupil shall draw on the board once a week.

## GRAMMAR SCHOOLS.

*One hour and a half per week. Two lessons, three-quarters of an hour each. Pupils draw on paper and blackboard; teachers, on blackboard.*

## FIRST YEAR.

*Subjects of Lessons.*—1. Freehand from copies. 2. Drawing from dictation. 3. Drawing from memory. 4. Design, or inventive drawing.

## SECOND YEAR.

*Subjects of Lessons.*—1. Freehand from copies. 2. Drawing from dictation, and design, or inventive drawing. 3. Memory drawing. 4. Models and objects from copies and objects.

## THIRD YEAR.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Dictation, memory, and design. 3. Model and object drawing from copies and solids. 4. Plane-geometrical drawing with compasses.

## FOURTH YEAR.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Drawing from dictation, memory, and design, or inventive drawing. 3. Models and objects from copy and solid. 4. Plane-geometrical drawing with compasses.

## FIFTH YEAR.

*Subjects of Lessons.* — 1. Freehand from copies. 2. Dictation, memory, and design, or inventive drawing. 3. Models and objects from copy and solid. 4. Plane-geometrical drawing with compasses.

## SIXTH YEAR.

*Subjects of Lessons.* — 1. Freehand analysis of ornament and plant-form. 2. Applied design for flat surfaces. 3. Model and object drawing from solids. 4. Perspective, parallel and angular.

*All the classes in every year.*

Every pupil to draw upon the board once a week, to develop the power of making drawings on a large scale and in a free style. Dictation, memory, model from object, and designing exercises, are suitable for the blackboard work.

## HIGH SCHOOLS.

*Two hours per week. Two lessons, one hour each. Pupils draw on paper and blackboard; teachers, on blackboard and paper.*

## FIRST YEAR.

*Subjects of Lessons.* — 1. Perspective, parallel and angular. 2. Models and objects shaded with (a) point and (b) stump, from copies. 3. Freehand analysis of plant-form and historical ornament. 4. Applied design.

## SECOND YEAR.

*Subjects of Lessons* — 1. Perspective, angular and oblique. 2. Models and objects, shaded from solid. 3. Freehand analysis of plant-form and historical ornament. 4. Applied design.

## THIRD YEAR.

*Subjects of Lessons.* — 1. Historic ornament, in monochrome and color, from the cast and examples. 2. Light and shade, with brush, from examples, cast, and nature. 3. Color and harmony of proportions from diagrams, examples, and nature. 4. Applied design.

*All the classes in every year.*

Occasional exercises on the board on a scale large enough to illustrate principles, by every pupil, should form a regular portion of the practice; and, at the commencement of every new process of work or subject of instruction, the main points or new features of it should be thoroughly explained and illustrated by diagrams on the board, both by teachers and pupils.

#### GENERAL INFORMATION.

##### *Use of Mechanical Aids and Tests.*

The pupil has to be taught to draw both by the unaided hand, and also by help of instruments and mechanical tests. How much must depend on the eye and hand alone, and how these may be legitimately assisted by the ruler and compasses, and not only how, but when and where, seem to be a perpetual puzzle to teachers. How and how much may a ruler be used to test a drawing? is often asked. This must to some extent be a matter of individual judgment; but, for convenience, I have stated below the manner in which the question has always been answered by me. In freehand and model drawing, a line must always be first drawn by the freehand alone before its length or direction can be tested. Then both these features may be tested by the ruler and measure; but corrections must invariably be made by the hand alone in sketching as well as in finishing.

So in the same way the symmetry of a symmetrical object may be tested whilst the drawing is in the sketch condition; but measurements must never be taken from the ruler, nor must a straight line ever be ruled in freehand or model drawing.

In order to make clear the best rules for the practice of drawing, and the proper use of mechanical aids, the following regulations applying to all classes and subjects are stated:—

1. **WHERE NECESSARY.**—In geometrical and perspective drawing by instruments, and in the practice of designing, all assistance to be derived from the use of rulers, compasses, and tracing-paper, is to be allowed, and in drawing from memory or dictation of these subjects also.

2. **WHERE OPTIONAL.**—In drawing from dictation and memory of freehand exercises, mechanical aids may be sometimes permitted, and in other exercises wholly disallowed, according to the option and judgment of the teacher; but practice in both manners is better than in one only.

3. **WHERE FORBIDDEN.** — In freehand drawing of objects or ornament from the copy or solid, no mechanical aids are permissible; the exercises being tests of the observation and manual skill of the pupils, unassisted, save by the verbal criticisms and tests applied by the teacher. Neither ruling nor measuring is to be permitted. The teacher will, however, explain the means whereby the accuracy of drawing may be tested and corrected whilst in the sketch condition, such as by the convergence of retreating parallel lines in model-drawing, or the test of direction of lines, symmetry of forms, and proportion of parts in ornament, before the sketch is made into a finished drawing.

These regulations are based upon the best experience of those who employ drawing and designing for practical purposes, whether in fine or industrial art, and will render a simple and clear answer to the teacher's question of, "When and how may mechanical assistance be rightly employed in teaching drawing?"

#### ELEMENTARY AND APPLIED DESIGN.

Some of the suggestions made concerning the first steps in design are epitomized, and placed together here, for the convenience of teachers, and for reference.

*Elementary Design. — Designing in the Three Grades of Schools.*

**PRIMARY.** — In the primary schools the exercise is to learn names, and become acquainted with repetition and symmetry.

**GRAMMAR.** — In the grammar schools, to apply this knowledge to the arrangement of forms, either from nature or historical ornament, and take the first steps in applied design.

**HIGH.** — In the high schools, to exercise the arranging power acquired in the grammar schools by elementary design to *applied design*; i.e., to ornament some object of use.

1. Primary. — Learn names and processes.

2. Grammar. — Learn to arrange.

3. High. — Learn to design for useful purposes.

#### *Simplicity of Arrangement.*

One of the greatest faults in the practice of elementary designing is over-elaboration.

The forms used must not be too small in proportion to the

ground to be covered, because this leads to confusion and loss of character in the design. There is much more beauty in the simple arrangement of good, well-drawn forms, having a large proportion to the surface which has to be covered, than in a profusion of complicated detail on a small scale.

The uncovered ground within a geometric form should never be more than one-third of the whole surface, the ornament occupying the remaining two-thirds.

Half-tint may be employed to distinguish the ornament from its background. Either the background may be tinted, or the ornament. Whichever covers the least surface should be in half-tint.

When there is more half-tint than white surface, the design is likely to appear heavy. The half-tint should be lighter than the outlining of the design.

Stems should be kept partly behind leaves and flowers, not appearing uninterruptedly at too great length, or they will appear obtrusive.

*Steps in Progressive Order in making an Elementary Design.*

1. Select the geometric form or combined forms to be filled, and determine whether the tendency of its axis is to be in a vertical or a horizontal direction, or the treatment to be in a rosette form.

2. Select the subject of the proposed design, whether it is to be a plant-form or an ornamental detail.

3. If the first, ascertain the principle of growth, whether opposite or alternate; i.e., whether leaves spring from the stem in pairs opposite to one another, or singly on alternate sides of the stem, and whether the flowers grow singly or in clusters.

4. Analyze the plant; remark the character of the leaf. Draw front views and side views of leaves and flowers, to use as material for the design.

5. If a detail of ornament be selected, notice how it has been used in connection with other forms.

6. Draw by freehand the unit of design. Trace it, and repeat it as often as required. Line in or finish with an even, distinct line.

*Principles of Elementary Design.*

1. Elementary designing is an exercise in arranging given forms, derived either from nature or historical ornament, in new and original combinations,

2. The selected forms, if natural, may be either parts of a plant, or an entire plant; namely, the leaves only, or the leaves, flowers, buds, and stem, with both front and side views of leaves and flowers combined. If ornamental, the given form may be a detail of some historical style; as, the Greek anthemion, the Egyptian lotus, or the Roman acanthus.

3. If the form be natural (as, for instance, that of the passion-flower), the proportional size and number of the leaves to the flower should be preserved as far as possible; if both leaves and flowers are used, the general growth of the plant should be followed.

4. Plant-forms should not be copied in all their minute details and natural irregularities when used in ornamental design, but be conventionalized; i.e., the general type-form should be taken, omitting unimportant details or accidental peculiarities, and retaining only the broad general character and structural arrangements of the plant.

#### PROPOSITIONS CONCERNING DESIGN BY OWEN JONES.

1. "Beauty of form is produced by lines growing out one from the other in gradual undulations. There are no excrescences. Nothing could be removed, and leave the design equally good or better."

2. "As in every perfect work of architecture a true proportion will be found to reign between all the members which compose it, so throughout the decorative arts every assemblage of forms should be arranged on certain definite proportions. The whole and each particular member should be a multiple of some simple unit."

3. "Harmony of form consists in the proper balancing and contrast of the straight, the angular, and the curved."

4. "In surface decoration all lines should flow out of a parent stem. Every ornament, however distant, should be traced to its branch and root."

5. "All junctions of curved lines with curved, or of curved with straight, should be tangential to each other."

6. "Flowers or other natural objects should not be used as ornament; but conventional representations founded upon them, sufficiently suggestive to convey the intended image to the mind without destroying the unity of the object they are employed to decorate. [NOTE. — Universally obeyed in the best periods of art; equally violated when art declines.] "



## CERTIFICATES FOR TEACHING DRAWING,

AWARDED UPON EXAMINATION TO TEACHERS OF THE PUBLIC SCHOOLS  
FROM THE STATE NORMAL ART SCHOOL OF MASSACHUSETTS.

Courses of lessons and lectures are given to teachers at the school in Boston, and can be given in any locality by teachers of drawing who have studied in it. The sheets of drawings can be prepared, and the examinations passed, in each of the five normal schools of the State, by arrangement with the director of the Normal Art School. The examinations are held annually in the month of June.

## CERTIFICATES OF THE THIRD GRADE.

FOR TEACHERS OF HIGH AND NORMAL SCHOOLS.

LIST OF CERTIFICATE DRAWINGS REQUIRED FOR PERMISSION TO BE  
EXAMINED.

*Instrumental Drawing.*

1. A sheet of Geometrical Problems.
2. A sheet of Perspective, including parallel, angular, and oblique problems.
3. A sheet of Machine-Drawing, from copies or lectures.
4. A sheet of Building Construction, from copies or lectures.

*Freehand Drawing.*

5. A sheet of Model-Drawing, in outline, from the object.
6. A sheet of two Model-Drawings, in crayon or pencil, shaded from the copy and object.
7. A sheet of two Model-Drawings, in stump, shaded from the copy and object.
8. A sheet of two Model-Drawings, with the brush, from the copy and object.
9. A sheet of two Outline-Drawings from natural foliage and common objects.
10. A sheet of Design, — one elementary, and one applied.
11. A sheet of Botanical Analysis of a plant, applied in design.
12. A sheet of Analysis of three styles of historic ornament.

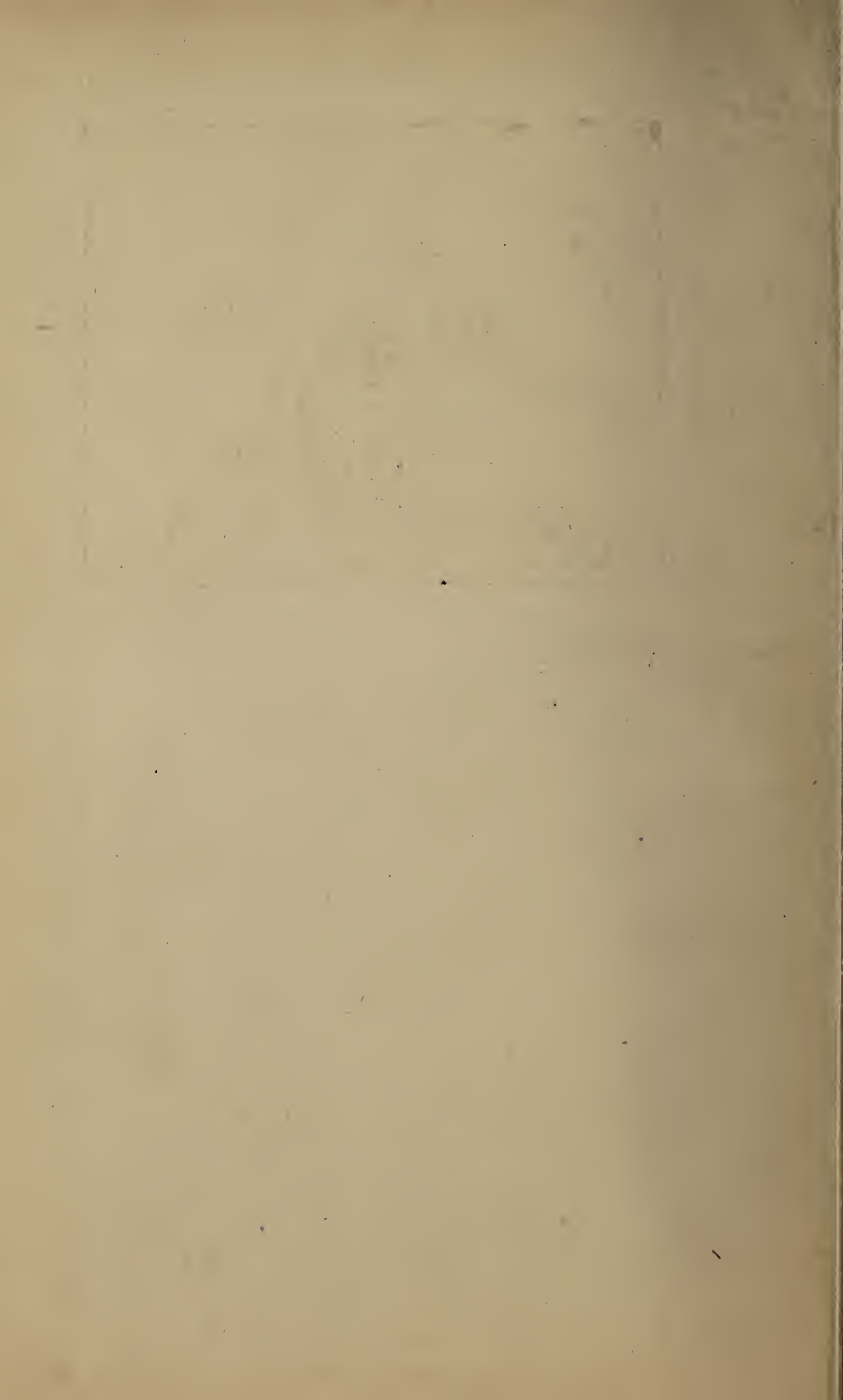
## EXAMINATION FOR CERTIFICATE.

The above drawings having been submitted and approved, time examinations for the completion of the certificate will be held at the end of the annual session as follows:—

- |  |                                     |
|--|-------------------------------------|
| 1. Perspective Practice. One hour.             | 5. Memory Drawing. One hour.        |
| 2. Perspective Theory. One hour.               | 6. Historical Ornament. One hour.   |
| 3. Model-Drawing, shaded from solid. One hour. | 7. Machine-Drawing. One hour.       |
| 4. Harmony of Color. One hour.                 | 8. Building Construction. One hour. |







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